TABLE OF CONTENTS

BRIGHAM CITY

IMPACT FEE ANALYSIS
Chapter 1

General Background

Impact fees are a tool that allows cities to make new development "pay its own way." They are one-time payments that tie costs to responsible parties by establishing a direct relationship between the demands placed on services by new development. In other words, they reflect new development's proportionate share of capital costs for public facilities. Before 1995, impact fees in Utah were governed by case law — much of it established by Utah courts *(Banberry Development Corporation v. South Jordan)*. In 1995, the Utah legislature passed a statute with specifications limiting the types of impact fees and specific procedures for instituting such fees. This statute is referred to as the Impact Fees Act and is found in Section 11, Chapter 36 of the State of Utah Code. However, the guiding principle remains the same — that a reasonable relationship between fees imposed on development and the needs generated by the new development must still exist. The statute provides that impact fees be used for construction of new or expanded capital facilities and are not allowed to make up deficiencies or pay for operations and maintenance expenditures.

The "reasonableness" test is met if three conditions can be proven: first, that there is a rational connection between fee and need for facilities; second, fees must not exceed proportionate share; and third, there must be a reasonable connection between expenditure of fees collected and benefits received by the development paying the fees.

Case law establishes that fees must be well designed to address needs directly attributable to the project bearing the cost. Where a fee applies to more than one project, it must be proportionately allocated among projects. In addition, an impact fee must have a planning basis (i.e., it must serve a public purpose). Revenues from impact fees must be segregated until used and must be expended in a timely fashion for the purposes originally designated. For purposes of the Utah Impact Fees Act, the time period is six years in which the collected revenues must be expended or encumbered for permissible uses.

The term most often cited in case law is "nexus." This term refers to the relationship of the fee to all of the conditions outlined above.

A written impact fee analysis is required for each fee. The analysis must identify direct impacts on system improvements of new development, demonstrate the relationship between needed system improvements and development activity, estimate proportionate share of costs (per lot, per unit) and clearly identify how the fee has been calculated.

Specific areas where impact fees may be collected are outlined in the Impact Fees Act as follows [11-36-102(11)]:

- water rights and water supply; treatment and distribution facilities;
- wastewater collection and treatment facilities;
- storm water, drainage and flood control facilities;
- municipal power facilities;
- roadway facilities;
- parks, recreation facilities, open space, and trails; and
- public safety facilities.

Proportionate share analysis considers: the cost of existing facilities; the financing structure of existing facilities; current contribution to cost by existing and new development; any credits due to new development; extraordinary costs of servicing new development; and a time-price differential for amounts paid at different times (PV). In other words, it establishes an equitable allocation of costs borne and benefits received in the past to costs yet to be borne and benefits yet to be received.

Various types of credits due to new development are calculated into the net impact fees in order to avoid any "double payments." However, credit is not given to developers for project improvements that are required as part of the development approval process. An example of this is land that is donated to an open space system in exchange for approval of increased density in the development. This is an exaction and cannot be credited toward an impact fee for parks and open spaces. If it were credited, the development would, in essence, be paid twice: once in the form of a density bonus and again as a credit against an impact fee. The system improvements offered in exchange for an impact fee credit must be directly related to those outlined in the Capital Facilities Plan.

Methodology

Wikstrom Economic & Planning Consultants (the "Consultants") have used the outline provided by the Utah League of Cities and Towns in calculating all impact fees. This methodology is outlined below.

Estimate Demand (Need) for Facilities. It is important to review the preliminary land-use recommendations to determine factors that will be reflected as affecting demand. These include:

- Land use type (e.g., residential, retail, manufacturing)
- Land use intensity (e.g., dwellings/acre, FAR, employment density)
- Land use functional type (e.g., convenience retail, shopping goods retail)
- Location (e.g., downtown, suburban, rural)
- Occupancy (e.g., persons per dwelling unit)
- Building size (e.g., SF, #bedrooms, #seats)
- Peaking factor (e.g., design demand for peak or average demand)

Estimate Physical Facilities Needed. The Capital Facilities Plan forms the basis for determining physical facilities needed. Each area of the plan is assumed to have converted demand into physical

facilities by applying service standards that are based on either geographical distribution (such as radii) or operating capacity/unit. The Capital Facilities Plan should also have estimated current capacity using all existing facilities by evaluating current usage and deriving capacity available to new development. The recommendations of each element essentially determine if there is a "gap" between existing capacity and need.

Estimate Cost of Facilities Needed. The analysis relies on the Capital Facilities Plan to establish a cost of the entire facility including land, buildings, equipment, site development, planning, architect & engineering fees, miles or linear feet of roadway, etc.

Apportion Cost to Get Gross Fee. Using the information developed in the steps outlined above, including total capacity of facilities needed to serve this development, the analysis will estimate demand (usage) for new development as a proportion of total capacity of facilities needed to serve new development and apply to total cost of facilities needed to serve this development so as to derive a proportionate cost assignable to new development.

Adjust Gross Fee for Other Contributing Revenues. Only those fees that are used to finance the capital cost of the same types of facilities for which impact fees are charged and that are paid by the development's occupants are considered as contributing revenue. The present value of these payments is calculated and deducted from the gross fee. If past payments are significant, they should also be deducted from the gross fee.

Adjust Gross Fee for Developer Contributions. Eligible developer contributions are set forth, with a procedure for establishing the value of the donated land and facilities.

For each type of impact fee, the consultants have identified the basis for demand and selected an appropriate methodology for determining the fee while relying on the best information provided to them.

Summary of Gross Impact Fees

Table 1-1: Summary of Gross Impact Fees	
Parks & Open Space	
Residential	$2,529 per single family residential unit $2,098 per multi-family residential unit *(subject to credits of $2.86 per unit plus a credit attributable to future bond payments which varies annually*)
Water	
All Types of Development	$2,276 per ERU *(subject to credit attributable to future bond payments varying annually)*
Wastewater	
All Types of Development	$853 per ERU *(subject to credit attributable to future bond payments varying annually)*
Electric	

Table 1-1: Summary of Gross Impact Fees	
All Types of Development	$46.69 per kilowatt hour *(Gross fee varies based on service size and capacity factor)*
Storm Drains	
All Types of Development	$1,201 single family residential $1,440 multi-family residential (or $0.40 per impervious sf, whichever is less) $0.40 /sf hard surfacing - nonresidential *(subject to credits based on storm water discharge from site)*

BRIGHAM CITY

IMPACT FEES FOR PARKS AND OPEN SPACE
Chapter 2

General Background

The Impact Fees Act clearly allows Brigham City to charge impact fees to mitigate the impacts of new development on, "parks, recreation facilities, open space and trails" [Utah Code 11-36-102 (11) (f)]. Based on the Capital Facilities Plan, a uniform citywide fee schedule is proposed for Brigham City.

Estimate of Demand (Need) for Facilities

Brigham City has 64 *developed park acres*[1], or 3.43 acres per 1,000 population (assuming a 2004 population of 18,742 persons).

(64 acres ÷ 18,742 residents) x 1,000 residents = 3.43 acres per 1,000 residents

The current standard for *open space* is 2.20 acres per 1,000 population.

(41 acres ÷ 18,742 residents) x 1,000 residents = 2.20 acres per 1,000 residents

Existing parks and open space are listed below:

Table 2-1: Inventory of Existing Parks and Open Space in Brigham City, 2004

Park Name	Total Acreage	Developed Park Acreage	Open Space	Unimproved Acreage
1200 West Fish Pond (Natural wetlands)	21.14	-	21.00	0.14
Animal Control Shelter Wetlands	1.68	-	1.68	-
Bill of Rights Plaza	3.58	3.58	-	-
Brigham Young Park	1.92	1.92	-	-
Constitution Park	8.40	8.40	-	-
E. Christensen Farms	65.00	-	-	65.00
Frog Pond Detention Basin	7.45	-	-	7.45
Horsley Park	1.03	1.03	-	-
John Adams Park	13.07	13.07	-	-
Lindsay Park	2.84	2.84	-	-
Mary E. Christensen Park	2.67	2.67	-	-
Mayor's Pond	18.48	-	18.48	-
Memorial Park	5.50	5.50	-	-

[1] Not including donated park land. With donated land, total developed park acreage totals 85.4 acres

Table 2-1: Inventory of Existing Parks and Open Space in Brigham City, 2004				
Park Name	**Total Acreage**	**Developed Park Acreage**	**Open Space**	**Unimproved Acreage**
Playground Park	1.05	1.05	-	-
Reeder Grove Park	3.00	-	-	3.00
Rees Pioneer Park	37.27	37.27	-	-
Snow Park	2.09	2.09	-	-
Watkins Park	5.98	5.98	-	-
Total	*202.15*	*85.40*	*41.16*	*75.59*
Less Donated Park land				
John Adams Park	(5.00)	(5.00)	-	-
Constitution Park	(8.40)	(8.40)	-	-
Memorial Park	(7.80)	(7.80)	-	-
Total	*(21.20)*	*(21.20)*	-	-
Net Total	*180.95*	*64.20*	*41.16*	*75.59*
Golf Course	*173.00*	*173.00*	-	-
Source: Brigham City Parks and Recreation				

School ground acreage has not been included in this analysis. While schools do provide some recreational opportunities for children, they are generally very limited in their accessibility to the general population. In addition, they are under school district, rather than City control and therefore cannot be directly used to further the recreational goals and objectives of Brigham City.

Private parks (accessible to members only) have not been included in the analysis. Therefore, total existing park acreage is 202 acres, with 85 of the acres improved. When deducting donated park land of 21 acres, the existing park land declines to 181 acres of which 64 are improved and 41 are open space. Donated land is deducted to accurately represent the level of service Brigham City intends to maintain for future residents. Brigham City does not foresee future land being gifted to the City, and therefore, does not plan for that level of service.

The golf course includes 173 acres of land. Condominiums sit on approximately 1.9 acres, of which the City owns roughly 60 percent of the area, while private condominium owners represent the balance of ownership. The property was deeded to Brigham City from the Federal Government in a series of transactions beginning in 1962 and ending in 1985. On 82 acres of the land there is a clause that the land must be used for public parks and recreation purposes, and failure to do so would allow the Secretary of Interior to reclaim the land. All but approximately 26 acres of golf course land was deeded by the Federal Government to the City. Twenty acres were donated to the City and six acres were acquired through land swapping.

Only residential uses are considered to generate demand for parks and open space in Brigham City, and therefore, population growth is used as the basis for impact fee calculations. It is estimated the

City will reach a population of 27,734 by 2030.[2] The population increase of 8,992 persons, or 48 percent of the current population, will place additional demands upon existing city parks and open space unless new parks and open spare are developed to mitigate the impacts of local growth.

Estimate of Physical Facilities Needed

Developed Park Acres

If no new parks are developed, the standard will drop to 2.31 acres of *developed park land* per 1,000 residents.

(64 acres ÷ 27,734 residents) x 1,000 residents = 2.31 acres per 1,000 residents.

In order to maintain the current standard of 3.43 developed acres per 1,000 residents, Brigham City needs to develop an additional 31 acres, for a total of 95 developed acres at buildout.

(3.43 ÷ 1,000) x 8,992 = 31 acres

64 (existing) + 31 (new) = 95 developed acres

Open Space

The current standard for *open space* is 2.20 acres per 1000 population.

(41 acres ÷ 18,742 residents) x 1,000 residents = 2.20 acres per 1,000 residents

If no new open space is planned for, the standard will decrease from 2.20 acres per 1,000 residents, to 1.47 acres of open space per 1,000 residents.

(41 acres ÷ 27,734 residents) x 1,000 residents = 1.47 acres per 1,000 residents

In order to maintain the current standard, Brigham City needs to acquire an additional 20 acres, for a total of 61 acres of open space at build out.

(2.20 ÷ 1,000) x 8,992 = 20 acres

41 (existing) + 20 (new) = 61 acres of open space

Summary of Facilities Needed

Brigham City has set forth the goal of maintaining the current standard of 3.43 developed park land and 2.20 open space acres per 1,000 residents. Therefore, when the City is fully developed, 31 additional park and 20 additional open space acres will be required as shown in Table 2-2.

[2] Bear River Association of Governments

Table 2-2: Comparison of Brigham City's Developed Park and Open Space Acres					
	Population	**Developed Park Acres**	**Acres/1000 Population**	**Open Space Acres**	**Acres/1000 Population**
Current (2004)	18,742	64	3.43	41	2.20
Buildout (2030)	27,734	95	3.43	61	2.20
Additional Needed		31		20	

In anticipation of serving future growth, Brigham City recently acquired 65 acres of developable park land.

Table 2-3: Recently Acquired Developable Land			
Property Name	**Total Acres**	**Park /Open Space Acres**	**Purchase Price***
E. Christensen Farms	82	65	$221,410
** The portion of the purchase price attributable to park acreage*			

A portion of the 65 acres can serve new development's needs; therefore, it is appropriate to include a portion of the cost of the 65 acres in impact fees, as described in greater detail below. The balance of the 65 acres will increase the level of service in Brigham City, and therefore, new development is not expected to cover those costs.

Brigham City anticipates needing to acquire an additional eight acres of park land (two parcels of roughly four acres each) in order to provide neighborhood parks within newly developed communities.

Brigham City does not plan to expand the golf course facilities, indicating the existing golf course facilities are adequate to meet the needs of a growing population. Since new residents of Brigham City will be using existing golfing facilities, it is necessary for them to pay their fair share of the current value of the golf course. The current book value of the golf course (excluding land) is $3,980,634. This value represents the current book value with buildings and equipment having been depreciated, exclusive of land. If the land were valued at a current market value of $19,030,000, the golf course value would be $23,010,634. On-going maintenance is covered by golf course fees in a separate fund.

Similarly, Brigham City does not plan to expand existing swimming pool facilities, nor develop a new swimming pool for new development. The existing swimming pool facilities are adequate to meet the needs of new development. Since new development will be using existing swimming pool facilities, it is necessary for them to pay their fair share of the current value of the swimming pool. The current book value of the pool is $2,824,844.

For fairness reasons, it is appropriate for new residents to buy-in to their fair share of the golf course as well as the swimming pool as described in greater detail below.

Estimate Cost of Facilities Needed

Park development costs vary considerably according to type of park development – playground equipment, picnic areas, baseball diamonds, soccer fields, etc. Development costs normally include grading and turfing, shrubbery, fencing, park facilities, irrigation, security lighting, utility extensions, curb and gutter improvements, etc., in addition to specific playground equipment, ball fields, etc. which vary from site to site. While recognizing costs differ among parks, it is still practical to establish average park development and land acquisition costs citywide and treat the analysis as one service area. The two average costs (land acquisition and park development) can then be used as the basis for apportioning a fair share of development impact fees.

New development will require 31 park acres and 20 open space acres, for a total of 51 incremental acres. Eight of the needed 51 acres must be acquired and developed within neighborhoods. According to Brigham City officials, the average cost of land in Brigham City is $120,000 per acre; however, this cost can vary greatly depending upon location of acreage. Brigham City does not anticipate any new park land will be gifted to the City. The cost to develop and acquire an additional eight acres to address future neighborhood park needs by new development is $960,000.

Brigham City recently paid $221,410 from the General Fund to acquire 65 developable park acres (E. Christensen Farms).[3] The remaining 43 of 51 needed acres are part of the newly acquired E. Christensen Farms property. New development must pay 66 percent of the $221,410, or $146,471.[4] This amount of impact fee revenues can be paid directly into the General Fund. These costs were incurred in 2004.

Average park development costs (in addition to land costs) are estimated at $120,000 per acre. Other impact fee studies throughout the state indicate that park development costs of within $80,000 to $100,000 per acre are standard along the Wasatch Front.[5] Brigham City's development costs are higher than average due to the planned nature of development at the parks in Brigham City. The estimated cost to develop the 31 park acres required for new development equates to $3,720,000 based on development costs of $120,000 per acre.

Buy-in costs are estimated at $146,471, and should be repaid to the General Fund. In addition, land acquisition costs of $960,000 plus development costs of $3,720,000 total $4,680,000 need to be paid by new development. The $4,680,000 must be placed in a separate impact fee account.

Total costs are estimated at $4,826,471 ($4,680,000 + $146,471).

[3] The market value of this property is estimated at nearly $650,000.

[4] 43 acres divided by 65 acres = 66 percent. $221,410 x .6615 = $146,471.

[5] See Sandy City and Taylorsville parks plans

Proportionate Share Analysis – Gross Fee

With population growth of 8,992 individuals, the average cost per person is $536.75 (2004 $'s).

Per Capita:

$4,826,471 ÷ 8,992 = $536.75

Assuming 3.23 persons per household for a single-family dwelling and 2.68 persons per household for a multi-family dwelling[6] results in the following gross impact fees:

Single Family Residential:

$536.75 x 3.23 = $1,733.71

Multi-Family Residential:

$536.75 x 2.68 = $1,438.49

In order to apportion a fair share of costs, the formula first calculates the total cost of future park development in Brigham City and then divides this cost by the growth in population to obtain a per capita cost figure. Finally, this number is multiplied by the average number of persons per household unit, with allowance made for the difference in single-family and multi-family dwelling units. The cost per acre figure (for park development and land acquisition) should be adjusted yearly by the Consumer Price Index.

Buy-In to Existing Facilities

Even though Brigham City does not plan to build additional golf course facilities, new development is expected to buy-in to its fair share of the value of the existing golf course facilities. This buy-in amount is calculated by determining the book value of the golf course facilities divided by total future residents. Allocating the book value of $3,980,634 amongst projected total future residents at buildout equates to $143.53 per resident.

$3,980,634 ÷ 27,734 = $143.53

When evaluating this value per household, the cost is $463.60 per single family household and $384.66 per multi-family household.

Single Family Residential:

$143.53 x 3.23 = $463.60

[6] U.S. Census Bureau

Multi-Family Residential:

$143.53 x 2.68 = $384.66

The above amounts represent the cost for new development to buy-in to the existing golf course facilities through impact fees.

Similarly, new development is expected to buy-in to the existing swimming pool facilities, as the facilities are adequate to meet the needs of new development. Allocating the book value of $2,824,844 amongst projected total future residents at buildout equates to $101.85 per resident.

$2,824,844 ÷ 27,734 = $101.85

When evaluating this value per household, the cost is $328.98 per single family household and $272.96 per multi-family household.

Single Family Residential:

$101.85 x 3.23 = $328.98

Multi-Family Residential:

$101.85x 2.68 = $272.96

The above amounts represent the cost for new development to buy-in to the existing swimming pool facilities through impact fees.

Impact Fee Study

In addition, new development is responsible for the costs of the parks and open space impact fee study, estimated at $8,000.[7] This cost is divided among new development as follows:

$8,000 ÷ 8,992 = $.89

When evaluating this cost per household, the cost is $2.87 per single family household and $2.39 per multi-family household.

Single Family Residential:

$.89 x 3.23 = $2.87

Multi-Family Residential:

[7] $4,000 impact fee analysis; $4,000 CFP preparation

$.89 x 2.68 = $2.39

The fee for a residential unit is therefore, the cost of parks and open space new development ($536.75), plus the cost of buy-in for the existing golf course facilities ($143.53), plus the cost of buy-in for the existing swimming pool facilities ($101.85), plus the impact fee study ($.89) for a total of $783.02, multiplied by the average household size, less any applicable credits (addressed below).

Single Family Residential Gross Impact Fee:

($536.75 + $143.53 + $101.85 + $.89) x 3.23 = $2,529.15

Multi-Family Residential Gross Impact Fee:

($536.75 + $143.53 + $101.85 + $.89) x 2.68 = $2,098.49

Adjust Gross Fee for Other Contributing Revenues

There are currently two bonds outstanding on Brigham City's swimming pool facilities. The bond amount of $2.8 million was issued in 1996 and the bond in the amount of $2,035,000 was issued in 2002, both with varying discount rates. Final bond payments will be made in 2006 and 2016 respectively. Future bond payments must be taken into account to avoid double-payment by new development, and must therefore, be credited off the gross impact fee, to arrive at a net impact fee.

Table 2-4: Brigham City Swimming Pool – Future Bond Payments

Date	Principal	Interest	Total
2004	$145,000	$190,733	$335,733
2005	$150,000	$186,516	$336,516
2006	$155,000	$179,835	$334,835
2007	$165,000	$70,300	$235,300
2008	$170,000	$65,063	$235,063
2009	$170,000	$59,325	$229,325
2010	$180,000	$52,975	$232,975
2011	$185,000	$45,669	$230,669
2012	$195,000	$38,081	$233,081
2013	$205,000	$30,325	$235,325
2014	$210,000	$22,025	$232,025
2015	$215,000	$13,525	$228,525
2016	$225,000	$4,613	$229,613
Total			$3,328,984

Source: Brigham City Corporation

The adjustment amount associated with Brigham City's future payments for the swimming pool bond

will vary depending on the year in which the development occurs. For example, in 2004, the credit amount will average $417; whereas in 2010, the credit amount will be $165. No credits will be given beyond the gross impact fee. The credit amount for single-family households, for example, cannot exceed $2,529. The net impact fee cannot be less than zero.

In order to ensure new development is not double-charged for park capital facilities, credits must be applied against the impact fee for any significant past payments that have been paid by new development in the form of taxes or other fees for park capital facilities. Within the past five years, the General Fund has been used to pay for Brigham City's parks capital expenditures. Appropriate credits for past payments must be calculated. These past payments are summarized below.

Table 2-5: Brigham City's General Fund Parks Capital Expenditures During Past Five Years

Year	Type of Expenditure	Amount of Expenditure	Total General Fund Expenditures
1999	Land, Equipment, Improvements	$756,825	$7,679,078
2000	Land, Buildings, Improvements, and Equipment	$697,940	$8,211,890
2001	Buildings, Improvements, and Equipment	$205,934	$8,159,470
2002	Buildings and Improvements	$312,434	$8,511,187
2003	Buildings and Improvements	$121,031	$8,637,572
Total		$2,094,164	$41,199,197

Source: Brigham City Corporation

In order to appropriately credit property owners for these past payments, an estimate of the amount of property taxes paid for park capital improvements, through the General Fund must be approximated. Only property taxes collected from vacant, agricultural and greenbelt lands will be evaluated since only these lands have the potential for future residential development.

Table 2-6: 2002 Brigham City Property Taxes Levied

Property Type	Taxes Levied	Acres
Vacant Land	$244,843	512
Greenbelt Land	$61,728	4,640
Agricultural Land	$116,299	3,420
Total Agricultural, Greenbelt and Vacant Land	$422,871	8,573
Total Property Taxes Levied	$1,630,120	
Percent of Property Taxes from Vacant, Greenbelt and Agricultural Land, FY 2002	26%	

Source: Box Elder County

Property taxes from vacant, agricultural and greenbelt lands account for 26 percent of all property taxes levied in Brigham City in 2002. Therefore, only 4.97 percent of general fund revenues from property taxes during the past five years that have been spent on capital facilities needs, to be credited against the impact fee.

Table 2-7: Credit for Past Property Tax Payments	
Parks Capital Costs, FY 1999 – 2003	$2,094,164
Property Taxes as Percent of General Fund	19.15%
Percent of Property Taxes from Vacant, Greenbelt and Agricultural Land, FY 2002	26%
Percent of Capital Costs Paid for by Vacant, Agricultural and Greenbelt Land	4.97%
1999 - 2003 Park Capital Costs Paid by Vacant Greenbelt and Agricultural Land	$104,046
Credit per Acre of Undeveloped Land	$11.45
Note: General Fund $8,511,187; Property Taxes Levied $1,630,120	

The formula for calculating impact fees is based upon type of dwelling unit. According to City officials the average density of dwelling units per acre is four units per acre for residential density.

Table 2-8: Credit by Dwelling Unit Type	
Credit per acre of undeveloped land	$11.45
Average residential density	4
Credits per dwelling unit	$2.86
Source: Brigham City Zoning	

Therefore, a credit of $2.86 must be applied to each household fee.

Adjust Gross Fee for Developer Contributions

Private recreation facilities are not eligible for deduction in the gross impact fee because they are not universally accessed, but may be required as part of the development approval process. Senate Bill 4 states that facilities funded through impact fees must be owned or operated by or on behalf of local government.

The developer may contribute land in place of the entire impact fee, or as a portion thereof. The land will be appraised at its predevelopment value and the appraisal amount will be the average of two separate appraisals, one appraiser being selected by the developer and one selected by Brigham City. The developer will be required to fund all appraisals. The developer's net contribution will be the average appraised value of the land less any costs incurred by the City for the transaction.

The value of donated facilities will be established by the replacement cost of the facilities, depreciated where applicable. Again, the developer's net contribution will be adjusted for any costs incurred by the City for the transaction.

Special Provisions

The impact fees calculated above, and summarized below, represent the maximum supportable impact fees for parks that are allowed by law. Brigham City may choose to adopt any impact fee that is less than those described above.

Brigham City may also choose to enact a provision that exempts low income housing and other development activities with broad public purposes from impact fees and establish a source or sources of funds (other than impact fees) to pay for that development activity.

Summary of Impact Fee Calculations

The following table summarizes the basic information used to calculate the parks and open space impact fee.

Table 2-9: Summary of Parks and Open Space Impact Fee Assumptions	
Park Acres per 1,000 population	3.43
Open Space acres per 1,000 population	2.20
Population (2004)	18,742
Persons per Household (Single-Family Dwelling)	3.23
Persons per Household (Multi-Family Dwelling)	2.68
Average Land Cost per Acre	$120,000
Average Park Development Cost per Acre	$120,000
Credits for Capital Expenses via General Fund	$2.86
Credits for Future Bond Payments	Varies based on year
Gross Impact Fee per capita	$783.02
Net Impact Fee	Varies based on year, taxable value & type of property (single v. multi-family)
Note: If credits exceed the gross impact fee, the net result is $0	

Accounting

The statute requires that revenues received from impact fees be placed in separate accounts and used only for those purposes for which they were collected. However, when a fee is charged to recoup monies already paid out, the recoupment fees may be repaid to the General Fund. In the case of Brigham City, $146,471 of impact fee revenues may be returned to the General Fund. After this level is reached, all monies collected from impact fees must be kept in a separate parks and open space fund and used only for park and open space development, as outlined in the Capital Facilities Plan.

BRIGHAM CITY

IMPACT FEES FOR WATER
Chapter 3

General Background

The Impact Fees Act allows cities to charge impact fees for "water rights and water supply, treatment and distribution facilities [Utah Code 11-36-102(11)(a)]." Based on the updated Capital Facilities Plan dated March 2004, a uniform citywide fee schedule is proposed for Brigham City.

Typical of most water systems, Brigham City's water system is largely a "front-ended" system, with a large share of water rights, storage and distribution systems already in place. The Impact Fees Act clearly states that fees may be charged "for public facility costs previously incurred by a local political subdivision to the extent that new growth and development will be served by the previously constructed improvement" [Utah Code 11-36-202 (3) (a)]. The impact fee will allow the City to permit new development where currently there is no access to water, thus limiting development activity.

The following analysis looks at three major cost components of a water system: rights and sources; treatment and storage; and distribution.

Water Rights and Sources

Estimate of Demand (Need) for Facilities

Demand for water is based upon the gallons per day that must be provided to meet the needs of City's residents and commercial/industrial interests. Current water rights are summarized below:

Water Rights/Sources	Amount
Springs	9.86 million gallons per day
Wells	11.02 million gallons per day
Total Existing Supply	20.88 million gallons per day
Future Sources	4.67 million gallons per day
Future Available Total	25.55 million gallons per day

Based on average peak demand, approximately 2,167[8] gallons per day per Equivalent Residential Unit ("ERU") are required to cover peak demand periods. Based on roughly 4,939 residential ERUs in Brigham City at the present time, this results in demand for 10,701,080 gallons per day ("gpd") for residential use.

For commercial and industrial use, the City provides approximately 4,010,920 gpd to commercial and

[8] 2,166.6491 gallons per day

industrial users to cover peak demand periods.[9]

Total demand on current water sources is summarized as follows:

Table 3-1: Existing Water Demand	
	Peak Demand (GPD)
Residential	10,701,080
Commercial / Industrial	4,010,920
Total	14,712,000
Source: Brigham City; Jones & Associates Consulting Engineers	

Water connections projected at buildout are based on a total of 7,276 dwelling units, with the same ratio of commercial development to existing development as at the present time.[10] With 20,880,000 gpd currently available and 21,672,991 of projected demand, it appears that Brigham City will not have adequate water rights and sources to meet projected community needs. With the City's planned future source development, the future available total water quantity will be 25,550,000 gpd, equating to a level of service of 2,554 gpd per ERU (25,550,000 ÷ 10,003). Over the last five to six years, much of the west has experienced drought. It is with wise foresight that Brigham City seeks to maintain a level of service of 2,554 gpd per ERU, which exceeds actual current usage demands.

Table 3-2: Projected Water Demand				
	Existing		**Projected**	
	Current Demand (gpd)	**ERUs**	**Projected Demand at Buildout (gpd)**	**Projected ERUs at Buildout**
Residential	10,701,080	4,939	15,764,302	7,276
Commercial/Industrial	4,010,920	1,851	5,908,689	2,727
TOTAL	14,712,000	6,790	21,672,991	10,003
**Commercial use is stated in equivalent residential connections so that commercial demand can be directly compared with residential demand. Obviously, commercial uses larger connection sizes than does residential, on average.*				

At buildout, it is projected that Brigham City will need to serve an additional 3,212 ERUs at minimum.[11]

Estimate of Physical Facilities Needed

Brigham City seeks to maintain a level of service of 2,554 gpd per ERU. Commercial/industrial demand varies considerably according to business type and accompanying meter sizes to serve their varying needs. Therefore, we have adjusted impact fees to reflect this increased demand based on

[9] Brigham City currently has 4,939 residential connections, 397 commercial connections and 2 industrial connections.

[10] Brigham City acknowledges that this figure could vary based on a variety of factors, including future annexations and allowable building densities.

[11] Variance of one due to rounding

meter size. This adjustment is shown later in the analysis.

Estimate Cost of Facilities Needed

The Capital Facilities Plan identifies costs for new spring development, new wells, treatment facilities, pressure reducing stations, and future upgrades to accommodate new development. These additional resources will supply roughly 4.7 MGD. The projects associated with water rights and sources are itemized below.

Table 3-3: Brigham City Water Rights and Sources: Facilities Needed	
Description	***Cost for Improvements***
Spring development	$250,000
Development of three new deep wells	$1,545,000
Total	$1,795,000
Source: Jones & Associates Consulting Engineers	

Proportionate Share Analysis – Gross Fee

The $1,795,000 cost for the spring and new wells development includes physical facilities associated with the spring and well structures. If a residential unit requires 2,554 gpd, then the following water requirements for new development result:

2,554 x 3,212 incremental ERUs = 8,203,448 gpd required by new development

Current water supplies of 20,880,000 gpd exceed current requirements of 17,341,660[12] gpd by 3,538,340 gpd. This 3,538,340 gpd represents excess capacity which new development can buy-in to as outlined in the section below. Additional capacity of roughly 4.7 million gpd is required to serve new development. As a result, new development is responsible for the costs associated with the new water supplies outlined above.

$1,795,000 ÷ 3,212 incremental ERUs = $558.84 per incremental ERU

Buy-In to Existing Facilities

Flat Bottom Canyon Spring and Reservoir Facility, as well as a Booster Pump Station were constructed in Brigham City in 1999 and 2000. These facilities will serve existing residents as well as new development. The book value of the assets as of 2003 is $460,489. Since there is currently excess capacity of 3,538,340 gpd based on a standard of 2,554 gpd per ERU, new development must buy-in to the excess capacity.

(3,538,340 ÷ 20,880,000) x $460,489 = $78,035

(Excess capacity ÷ total current sources) x book value = new development's share

[12] 6,790 ERUs x 2,554 gpd standard

$78,035 ÷ 3,212 =$24.29 per incremental ERU

The total cost per ERU for water rights and sources is $583.13 ($558.84 + $24.29).

Water Storage and Treatment

Storage

Estimate of Demand (Need) for Facilities

The total present culinary water storage capacity is 12.45 million gallons. This storage capacity is contained in seven (7) separate culinary reservoirs. Based on the Capital Facilities Plan as well as average daily demand, the water storage currently required (including fire suppression) is 6,251,744, resulting in current surplus storage capacity of 6,198,257 gallons. Current water storage requirements are calculated as follows:

Average daily demand: 5,073,745 gals per day

Fire suppression: 1,177,998 gals per day[13]

Total: 6,251,744 gals per day

Average storage demand per ERU is summarized as follows:

6,251,744 ÷ 6,790 ERUs = 921 gals per ERU

Estimate of Physical Facilities Needed and Associated Cost

Construction of a new five million gallon reservoir was completed in Brigham City in 2002. The book value of the asset, as of 2003, is $1,788,959. This reservoir will serve existing residents as well as new development; therefore, the cost should be borne by all city residents and businesses.

Proportionate Share Analysis – Gross Fee

Assuming storage requirements of 9,212,763 (921 gals per ERU x 10,003 ERUs) at buildout, the cost per ERU (921) is calculated as follows:

(921 ÷ 9,212,763) x $1,788,959 = $178.84 per ERU[14]

[13] Based on fire suppression needs of 1,920,000 gallons for 8,176 connections (or 9,512 ERUs) per the Brigham City Culinary Water Master Plan Update, April 1997, Figure 2B

[14] Another approach is to evaluate cost per ERU based on total capacity. 12,450,000 gallons total capacity ÷ 10,003 ERUs at buildout = 1,245 gallons per ERU. 1,245 gallons per ERU ÷ 12,450,000 gallons total capacity x $1,788,959 book value = $178.89 per ERU

The reservoir was funded by issuance of a revenue bond in the amount of $2,050,000 in 2002. Future bond payments are taken into account in the "Fee Adjustments for Other Contributing Revenues" section of this analysis to avoid double-payment by new development.

Treatment

Estimate of Demand (Need) for Facilities and Physical Facilities Needed

According to the Capital Facilities Plan, two additional water treatment facilities need to be constructed to serve demands of new development. It is recommended one treatment facility be constructed at Knoll Spring in Mantua Valley, and the other at Precipice Spring in Box Elder Canyon, Mantua Valley. Both of these facilities will serve strictly new development.

Estimate Cost of Facilities Needed

According to the Capital Facilities Plan, the estimated cost to construct the two new treatment facilities is $2,586,000. Since these facilities are required to serve new development, the cost must be borne by incremental future ERUs.

Proportionate Share Analysis – Gross Fee

The cost per ERU for the new water treatment facilities is:

$2,586,000 ÷ 3,212 = $805.11 per incremental ERU

The total cost per ERU for water storage and treatment is $983.95 ($178.84 + $805.11).

Water Distribution

Estimate of Demand (Need) for Facilities and Physical Facilities Needed

Additional distribution lines necessitated by new development citywide are outlined as follows:

Table 3-4: Brigham City Water Distribution Facilities Needed

Description	*Improvements for New Development*
Pressure reduction stations	$263,000
8", 10", 12" water main expansions	$63,000
8", 10" water main expansions	$62,000
8", 10" water main expansions	$87,000
8", 10" water main expansions	$6,000
Future 12" water main	$169,000
10" water main expansion	$402,000
10" water main expansion	$828,000

Table 3-4: Brigham City Water Distribution Facilities Needed	
Description	***Improvements for New Development***
Total	$1,880,000
Source: Jones & Associates Consulting Engineers	

Estimate Cost of Facilities Needed

Citywide facilities needed to accommodate new development are outlined in Table 4 above, at a cost of $1,880,000.

Proportionate Share Analysis – Gross Fee

New development needs to fund the new capital facilities as outlined in Table 3-4 above. These capital facilities will serve new development (estimated 3,212 ERUs).

$1,880,000 ÷ 3,212 = $585.31per incremental ERU

Buy-In to Existing Facilities

Several distribution lines have recently been constructed in Brigham City as outlined in Table 5 below. One of these projects serves both old and new development, while the remaining projects were constructed specifically to serve new development.

Table 3-5: Brigham City Existing Water Distribution Facilities with Excess Capacity		
Project Name	**Serving**	**Current Book Value**
10" Water Main – past airport facility	old and new development	$113,600
8" Water Main – Bear River Water Conservancy	New development	$140,000
New Waterline – to bird refuge on Forest Street	New development	$184,000
1400 West Forest Street	New development	$28,000
Total		$465,600
Source: Jones & Associates Consulting Engineers		

The "fair share" of the 10-inch water main constructed to serve both old and new development, for one ERU is based on total estimated ERUs at build-out:

$113,600 ÷ 10,003 = $11.36 per ERU

The cost of the remaining three distribution lines which will serve new development (estimated at an incremental 3,212 ERUs) is:

($140,000 + $184,000 + $28,000) ÷ 3,212 = $109.59 per incremental ERU

The total distribution fee citywide is calculated at $706.26 ($585.31 + $11.36 + $109.59)

Impact Fee Study

By law, the cost of the impact fee analysis can be included in the calculation of impact fees. The estimated cost of the impact fee study is $8,800.[15]

$8,800 ÷ 3,212 future connections = $2.74 per incremental ERU

Gross Fee Summary

The water gross impact fee for water rights/source, treatment, storage and distribution is summarized in Table 3-6.

Table 3-6: Summary of Gross Fee

	Single-Family Residential (1 ERU)
Water Source Facilities	$583.13
Water Storage	$178.84
Water Treatment	$805.11
Water Distribution	$706.26
Impact Fee Study	$2.74
Total	$2,276.08

The water distribution fee for residential units (one ERU) is $2,276.08. Multi-family residential gross impact fees are $1,889.15 and are determined based on the ratio of average persons per household.

2.68 persons per multi-family residence ÷ 3.23 persons per single-family residence = 83%

$2,276.08 x 83% = $1,889.15 multi-family residential gross impact fee

The water distribution fee for commercial/industrial use is based on number of fixtures. The average residence contains 24 fixtures units.[16] Based on this level of standard, the cost per fixture unit is $94.84 per fixture unit.

$2,276.08 ÷ 24 fixture units per ERU = $94.84 gross impact fee

If a commercial entity has 80 fixture units, the impact fee will be $7,587.

$94.84 x 80 fixture units = $7,587

The table used to determine number of fixture units for commercial entities is located in the appendix.

Fee Adjustment for Other Contributing Revenues

[15] $4,000 WEPC; $4,800 Jones & Associates

[16] Based on average single-family housing profiles per Brigham City Corporation

Currently, there is a bond outstanding for a five-million gallon reservoir completed in 2002. The bond is in the amount of $2,050,000 and will be paid off in 2022. Therefore, an adjustment needs to be made to the gross fee to avoid double payments.

Table 3-7: Brigham City Water Bond Future Payments

Year	Principal	Interest	Payment	ERUs	Population	Payment per ERU	Present Value	Credit Amount
2004	$102,000	$76,907	$178,907	6,790	18,742	$26.35	$26.35	$353.71
2005	$103,000	$72,878	$175,878	6,896	19,035	$25.50	$25.50	$327.36
2006	$102,000	$68,809	$170,809	7,004	19,333	$24.39	$24.39	$301.86
2007	$103,000	$64,780	$167,780	7,114	19,635	$23.59	$23.59	$277.47
2008	$102,000	$60,712	$162,712	7,225	19,942	$22.52	$22.52	$253.89
2009	$103,000	$56,683	$159,683	7,338	20,254	$21.76	$21.76	$231.37
2010	$102,000	$52,614	$154,614	7,453	20,571	$20.75	$20.75	$209.61
2011	$103,000	$48,585	$151,585	7,569	20,893	$20.03	$20.03	$188.86
2012	$102,000	$44,517	$146,517	7,688	21,220	$19.06	$19.06	$168.84
2013	$103,000	$40,488	$143,488	7,808	21,551	$18.38	$18.38	$149.78
2014	$102,000	$36,419	$138,419	7,930	21,888	$17.45	$17.45	$131.40
2015	$103,000	$32,390	$135,390	8,054	22,231	$16.81	$16.81	$113.95
2016	$102,000	$28,322	$130,322	8,180	22,578	$15.93	$15.93	$97.14
2017	$103,000	$24,293	$127,293	8,308	22,932	$15.32	$15.32	$81.20
2018	$102,000	$20,224	$122,224	8,438	23,290	$14.49	$14.49	$65.88
2019	$103,000	$16,195	$119,195	8,570	23,655	$13.91	$13.91	$51.40
2020	$102,000	$12,127	$114,127	8,704	24,024	$13.11	$13.11	$37.49
2021	$103,000	$8,098	$111,098	8,840	24,400	$12.57	$12.57	$24.38
2022	$102,000	$4,029	$106,029	8,978	24,782	$11.81	$11.81	$11.81
Total	$1,947,000	$769,070	$2,716,070					

Based on projected ERUs outlined above, the present value of future water bond payments per ERU varies annually. For example, in 2004 the credit amount will be $353.71; in 2018 the credit amount will be $65.88; and so forth. This amount will be credited against gross impact fees, to determine net impact fees. As outlined above, the credit amount varies by year. If the credit amount exceeds the gross impact fee amount, the net effect is zero. In other words, no credits will be given beyond the gross impact fee. The net impact fee cannot be less than zero.

Brigham City has not used general fund sources to finance culinary water development within the past five years and therefore no credits have been made for significant past payments.

Special Provisions

The impact fees calculated above represent the maximum supportable impact fees for water that are allowed by law. Brigham City may choose to adopt any impact fee that is less than that described above.

Brigham City may also choose to enact a provision that exempts low income housing and other development activities with broad public purposes from impact fees and establish a source or sources

of funds (other than impact fees) to pay for that development activity.

Accounting

All revenues received for water *sources* should be placed in a special culinary water impact fees account to pay for the new spring and well development. All revenues received for water *treatment* should be placed in a special culinary water impact fees account to pay for the new water treatment facilities. All revenues received for water *storage* should be placed in the impact fees account to pay for water storage projects. Finally, the portion of the impact fee received for water *distribution* should be placed in a water account to pay for lines attributable to new development.

BRIGHAM CITY

IMPACT FEES FOR WASTEWATER
Chapter 4

General Background

The Impact Fees Act allows fees to be charged to mitigate the impacts of new development on "wastewater collection and treatment facilities" [Utah Code 11-36-102 (I 1)(b)]. Brigham City's impact fee will be directly related to the cost of providing new sanitary sewer infrastructure for new development.

Impact fees are a tool that allows cities to make development 'pay its own way.' They are one-time payments that tie costs to responsible parties by establishing a direct relationship between the demands placed on services by new development. In other words, they reflect new development's proportionate share of the capital costs for public facilities. The guiding principle is that a reasonable relationship exists between fees imposed on development and the needs generated by the new development. The statute provides that impact fees be used for construction of new or expanded capital and are not allowed to make up deficiencies or pay for operations and maintenance.

The following analysis separates demand and costs by the major components of Brigham City's wastewater system: wastewater transmission and treatment systems.

Estimate of Demand (Need) for Facilities

Wastewater Transmission

In 1989 a major transmission line project was completed, referred to as the 'South Outfall Line.' The projected cost was $1,419,296 in 1989. The South Outfall Line offers capacity of 8.78 cfs (cubic feet per second) or the ability to service 12,989 ERUs. (An equivalent residential unit (ERU) is defined as the projected amount of wastewater flow used by the proposed structure divided by the estimated wastewater flow of one single family residence based on the community density. In Brigham City the population divided by number of connections equates to approximately 3.22 persons per household.

Currently, the Outfall Line is operating at 45 percent capacity, resulting in excess capacity of 55 percent, available for future residents to buy-in to. Assuming 9,971 ERUs at buildout, the South Outfall Line will serve roughly 8,597 connections or approximately 27,682 total residents. Jones and Associates Engineering Consultants projected an incremental 3,227 ERUs, or 2.83 additional cfs will be needed for Brigham City to achieve buildout of 9,971 ERUs (6,744 currently plus 3,227 incremental). The South Outfall Line actually has capacity to serve 12,989 ERUs; however total projected ERUs are only 9,971.

	ERUs	Connections	Population
Current	6,744	5,815	18,742
Buildout	9,971	8,597	27,682

In 2003, the West Forest Street Water and Sewer Extension project was completed at a cost of $536,130. Brigham City will be reimbursed $476,003 by the U.S. Fish and Wildlife Service for the project. The City's total contribution for oversizing is therefore $60,127. This expense was originally funneled through the City's Water Department however; the expense has since been transferred to the City's Wastewater Department account.

Wastewater Treatment

Brigham City constructed a treatment plant in 1987, which the City owns, operates, and maintains. The plant services Brigham City and Mantua. The original cost in 1987 was $10,386,487. In 1996, a drying bed expansion was completed at a cost of $1 million. The plant is designed to process four million gallons per day (MGD) with a peak flow of 6.0 MGD. The plant currently has a Peak Annual Daily Flow of 2.6 million gallons. Assuming current connections of 5,815, this is the equivalent of 6,744 ERUs.[17] The plant is currently operating at 68 percent of capacity. Assuming ERUs of 9,971 at buildout, the plant has adequate capacity to meet the needs of new development.

The City has 5,322 residential and 296 commercial connections. There are also 197 residential connections from Mantua City in the system.[18] Total connections equate to 6,744 ERUs which is approximately 66 percent of the City's ultimate projected size.

Table 4-1: Brigham City Projected Population and ERU Growth

Year	Population	ERUs	Total Incremental ERUs
2004	18,742	6,744	
2005	19,035	6,853	108
2006	19,333	6,960	216
2007	19,635	7,069	324
2008	19,942	7,179	435
2009	20,254	7,292	547
2010	20,571	7,406	661
2011	20,893	7,521	777
2012	21,220	7,639	895

[17] Residential connections of 5,322 + commercial connections of 296 + Mantua connections of 197 = 5,815 connections. According to Jones & Associates, commercial connections equate to approximately 4.1394 ERUs, whereas one residential connection equates to one ERU, for a total of 6,744 ERUs currently.

[18] Brigham City has agreements with Mantua City dated 1978. Mantua City owns and operates its own line and its outfall through Box Elder Canyon to 600 East and 350 South in Brigham City. Mantua is assessed a bill on a monthly basis by Brigham City based on the number of connections at 80 percent of Brigham City residents' sewer rates.

Table 4-1: Brigham City Projected Population and ERU Growth			
Year	**Population**	**ERUs**	**Total Incremental ERUs**
2013	21,551	7,759	1,014
2014	21,888	7,880	1,136
2015	22,231	8,003	1,259
2016	22,578	8,128	1,384
2017	22,932	8,255	1,511
2018	23,290	8,384	1,640
2019	23,655	8,516	1,771
2020	24,024	8,649	1,905
2021	24,400	8,784	2,040
2022	24,782	8,921	2,177
2023	25,169	9,061	2,317
2024	25,563	9,203	2,458
2025	25,963	9,347	2,602
2026	26,369	9,493	2,749
2027	26,781	9,642	2,898
2028	27,200	9,792	3,048
2029	27,625	9,946	3,202
2030	27,682	9,971	3,227
Source: Bear River Association of Governments; Jones & Associates Consulting Engineers			

While there is excess capacity in both the wastewater transmission and treatment systems which new residents can buy-in to and utilize, the Capital Facilities Plan identifies seven new projects required to accommodate wastewater transmission and treatment needs associated with new development as outlined below.

Estimate of Physical Facilities Needed and Associated Cost

Wastewater Relief Lines

Jones & Associates Consulting Engineers has estimated additional facilities need to be built to accommodate future demand. These projects and associated costs are as follows:

Table 4-2: Brigham City Wastewater Projects (Relief Lines)		
Project	**Description**	**Cost Estimate**
1	8" Sewer relief line on Main Street from I 100 South to 1000 South	$35,583
2	12" sewer relief line on 700 North from 400 East to 600 East	$47,300
3	Pressure sewer relief line on Watery Lane from the treatment plant to SR- 1 3	$133,980

Table 4-2: Brigham City Wastewater Projects (Relief Lines)		
Project	**Description**	**Cost Estimate**
4	10" sewer relief line on Main Street from 900 North to 1500 North (Wilson Lane)	$131,560
5	Sewer lift station with pressure sewer line south of I 100 North near 1-15	$88,440
6	Sewer lift station with pressure sewer line on West Forest Street to the existing sewer lift station near the Bear River Bird Refuge future Visitor's Center	$221,760
Total		$658,623
Source: Jones & Associates Consulting Engineers		

Proportionate Share Analysis – Gross Fee

Based on a cost estimate totaling $658,623 (2004 $'s), the prorated share of Sewer Relief Lines would be $204.10.

$658,623 ÷ 3,227 incremental ERUs = $204.10 per ERU

Oversized Wastewater System Elements Buy-In

There are four elements of the Brigham City wastewater system which have been oversized in anticipation of future growth. These items are the oversized lines within the City; the Wastewater Treatment Plant; the South Outfall Line; and the two sewer lift stations and pressure sewer lines on West Forest Street which have been oversized.

The current book value of the wastewater lines within Brigham City, (excluding the Wastewater Treatment Plant, the South Outfall Line, and the West Forest Street Project which will be analyzed separately), is $1,108,675.[19] Assuming 9,971 ERUs at buildout, and current ERUs of 6,744, the sewer mains are currently operating at 68 percent of capacity, resulting in 32 percent available for new development buy-in. The prorated share of sewer mains would be $354,776.

$1,108,675 x 32% = $354,776

The prorated share per incremental ERU is $109.94.

$354,776 ÷ 3,227 incremental ERUs = $109.94 per ERU

The Treatment Plant has the ability to serve 9,971 ERUs. Currently, 68 percent of the treatment plant capability is being used, leaving 32 percent for the needs of future development. The buy-in amount is determined by multiplying the percentage of excess capacity by the book value of the plant, and dividing by future ERUs. The waste treatment plant has a current book value of $3,916,195. The value of the treatment plant representing excess capacity is $1,253,182.

$3,916,195 x 32% = $1,253,182

[19] Per Brigham City Corporation

The prorated share per incremental ERU is $388.34.

$1,253,182 ÷ 3,227 incremental ERUs = $388.34 per ERU

The South Outfall line offers capacity of 8.78 cfs, of which 45 percent is currently being used (3.91 cfs). Projected incremental usage resulting from future connections equates to 2.83 incremental cfs, resulting in future total flow of 6.74 cfs. The current book value of the South Outfall line is $994,380. If calculating the amount of buy-in based on *projected total usage* of the line, the amount of buy-in becomes 42 percent of $994,380, or $417,640.

2.83 incremental cfs ÷ 6.74 cfs at buildout = 42%

$994,380 x 42% = $417,640

The prorated share per incremental ERU is $129.42.

$417,640 ÷ 3,227 incremental ERUs = $129.42 per ERU

The final element of the system with excess capacity is the oversizing of two sewer lift stations and pressure wastewater lines on West Forest Street. The total cost of the project, completed in 2003, was $536,130. Brigham City will be reimbursed $476,003 by the U.S. Fish and Wildlife Service; therefore, the net cost to Brigham City is $60,127. When this amount is apportioned among new ERUs, the cost is $18.63 per ERU.

$60,127 ÷ 3,227 incremental ERUs = $18.63 per ERU

This expense was financed through Brigham City's Sewer Department; therefore, $60,127 of wastewater impact fees must be paid into the Wastewater Enterprise Account to reimburse for this expenditure.

The sum of the four oversized elements of the system to which new development must buy-in to, are $109.94 for the oversized lines within the City, $388.34 for the Treatment Plant excess capacity, $129.42 for the excess capacity at the South Outfall Line, plus $18.63 for the two sewer lift stations and pressure sewer lines on West Forest Street, for a total of $646.42 per ERU.

Impact Fee Study

By law, the cost of the impact fee analysis can be included in the calculation of impact fees. The estimated cost of the impact fee study was $8,900.[20]

$8,900 ÷ 3,227 incremental ERUs = $2.76 per ERU

[20] $4,000 WEPC; $4,900 Jones & Associates

Summary of Gross Fee

A summary of the costs for new construction to accommodate new development, buy-in to existing facilities with excess capacity, as well as charges related to the impact fee study are summarized below. The $853.28 represents a gross impact fee prior to credits.

Sewer Relief Lines	$204.10
Oversized Sewer System Elements Buy-in	$646.42
Impact Fee Study	$2.76
Total Gross Impact Fee	$853.28

The $853.28 represents the cost per incremental ERU. Single-family residences will be charged the gross impact fee of $853.28; while multi-family residences will pay $708.22 based on a per capita ratio.

2.68 persons per multi-family residence ÷ 3.23 persons per single-family residence = 83%

$853.28 x 83% = $708.22 multi-family residential gross impact fee

The wastewater distribution fee for commercial/industrial use is based on number of fixtures. The average residence contains 24 fixtures units.[21] Based on this level of standard, the cost per fixture unit is $35.55 per fixture unit.

$853.28 ÷ 24 fixture units per ERU = $35.55

If a commercial entity has 80 fixture units, the gross impact fee will be $2,844.

$35.55 x 80 fixture units = $2,844 gross impact fee

The table used to determine number of fixture units for commercial entities is located in the appendix.

Fee Adjustments for Other Contributing Revenues

There are currently two revenue bonds outstanding on Brigham City's wastewater facilities. The bond in the amount of $975,000 was issued in 1987 and the bond in the amount of $8,200,000 was issued in 1993, both with varying interest rates. The 1987 bond will be paid off in 2007 while final payments on the 1993 bond will occur in 2005. Future bond payments must be taken into account to avoid double-payment by new development, and must therefore, be credited off the gross impact fee, to arrive at a net impact fee.

Table 4-3: Brigham City Wastewater Bond Future Payments

[21] Based on average single-family housing profiles per Brigham City Corporation

Year	Principal	Cumulative Principal Remaining	Interest	Payment	ERUs	Pmt per ERU	PV	Credit Amount
2004	$1,158,750	$2,435,000	$42,680	$1,201,430	6,744	$178.15	$178	$355.55
2005	$1,178,750	$1,276,250	$22,600	$1,201,350	6,853	$175.30	$165	$177.40
2006	$48,750	$97,500	$0	$48,750	6,960	$7.00	$6	$12.02
2007	$48,750	$48,750	$0	$48,750	7,069	$6.90	$6	$5.79
Total	$2,435,000		$65,280	$2,500,280				

Source: Brigham City Corporation

Based on projected ERUs outlined above, the present value of future wastewater bond payments per ERU equates to credits of $356 in 2004; $177 in 2005; $12 in 2006; and $6 in 2007. This amount will be credited against gross impact fees, to determine net impact fees. As outlined above, the credit amount varies by year. If the credit amount exceeds the gross impact fee amount, the net effect is zero. In other words, no credits will be given beyond the gross impact fee. The net impact fee cannot be less than zero.

Special Provisions

The impact fees calculated above represent the maximum supportable impact fees for wastewater that are allowed by law. Brigham City may choose to adopt any impact fee that is less than those described above.

Brigham City may also choose to enact a provision that exempts low-income housing and other development activities with broad public purposes from impact fees and establish a source or sources of funds (other than impact fees) to pay for that development activity.

It is also possible for Brigham City to assess a fee associated with the actual connection, inspections and administrative fees of the wastewater hookup. These items do not fit under the scope of the impact fee and would need to be assessed as a hookup fee. The Impact Fees Act Section II -36-201 defines hookup fees as:

> "(6) ... reasonable fees, not in excess of the approximate average costs to the political subdivision, for services proved for and directly attributable to the connection to utility services, including gas, water, sewer, power, or other municipal, county, or independent special district utility services."

Accounting

Impact fee revenues received in lieu of the West Forest Street Project ($60,127) should be placed in the Wastewater Enterprise Fund to repay the City for expenses it has already incurred. This is the equivalent of $18.63 per impact fee collected for each ERU calculated. All other funds received for wastewater impact fees should be placed in a separate Wastewater Impact Fee Account.

BRIGHAM CITY

ELECTRIC IMPACT FEES
Chapter 5

General Background

The Impact Fees Act allows cities and towns to charge impact fees to mitigate the impacts of new development on 'municipal power facilities' [Utah Code 11-36-102 (11) (d)] as long as the municipality provides its own electrical power and a reasonable relationship exists between the fees imposed on development and the needs generated by new development. The increased amount of energy required by new development depends upon the rate at which energy is used[22] and the length of time energy is required. In addition, energy demands are not constant throughout the day – there are peak demand periods[23] – and Brigham City must have sufficient capacity to supply the energy requirements of existing and new development at these peak times.

The analysis below identifies the electrical power demands that new development will place on Brigham City facilities, especially during peak periods, and demonstrates that a reasonable relationship for impact fees can be established based on the required service size of electricity (which determines the rate at which electricity can be used) and peak demand periods. Note that impact fees are only calculated for costs of capital infrastructure, as outlined in the Electrical Master Plan, and not for the operating activities associated with providing municipal power to Brigham City.

Estimate of Demand (Need) for Facilities

Average Demand

Electrical demand (the amount of energy consumed) depends on power and time. In electrical terms, this is known as E=Pt, where E=energy consumed; P=power (the rate at which energy is used); and t=time. A kilowatt (KW), a standard unit of electrical *power*, is equal to 1000 watts; a kilowatt hour (KWH) is a unit of electrical *energy* and is equal to one kilowatt acting for one hour. The amount of energy consumed in Brigham City in 2003 is summarized in the table below in terms of kilowatt usage.

Table 5-1: Brigham City Electric Usage 2003

Type of Usage	KWH per Year (Total)	KWH per Day (Total)	Percent of Total Usage
Residential	49,967,954	136,899	33.8%
Commercial	45,210,306	123,868	30.6%
Industrial	43,770,595	119,919	29.6%
Total	138,948,855	380,682	94%

[22] Power ratings (for appliances), or service sizes (for electrical hookups), determine the rate at which energy can be used.

[23] Peak demand periods are generally during the morning hours when households are getting ready for work, school, etc. and during the early evening hours. For businesses, peak demand occurs during business hours.

Table 5-1: Brigham City Electric Usage 2003			
Type of Usage	**KWH per Year (Total)**	**KWH per Day (Total)**	**Percent of Total Usage**
Note: Remaining 6 percent of usage due to street lights and other municipal electric usage and system losses			
Source: Brigham City Corporation			

Existing usage comes from 6,831 connections, residential, commercial and industrial, as shown below.

Table 5-2: Brigham City Electric Connections 2003			
Type of Usage	**Number of Connections**	**KWH per Year/ Connection**	**KWH per Day/ Connection**
Residential	6,055	8,252	23
Commercial	775	58,335	160
Industrial	1	43,770,595	119,919
Total	6,831	122,918	na
Source: Brigham City Corporation			

While 33.8 percent of all electrical demand comes from residential sources, because of the large number of residential connections, the average usage in 2003 per residential connection is only 8,252 KWH, compared to 58,335 KWH for commercial uses and 43,770,595 for industrial use. In fact, one commercial connection, on average, uses seven times the amount of one residential connection.

160 KWH/Day (Commercial) ÷ 23 KWH/Day (Residential) = 7

Because we know that the average service size of a residential connection has 3-5 KVA[24] in the past, using the relationship above, we can calculate an average size of commercial connections in Brigham City.

3 -5 KVA x 7 = 21 – 35 KVA

The average service sizes of residential and commercial connections will be used later in the analysis to calculate the potential demand that could be placed on Brigham City electrical facilities, assuming all connections are running at full capacity, and to compare this number to peak hour demand (highest actual demand on record for a one-hour period).

Peak Demand

Brigham City electric records indicate that peak hour demand in the 2003 calendar year was 29,220 KW. This is nearly double the average demand of 15,862 KW for a one-hour period, as shown in the table below.

[24] One KVA means 1000 volt amperes. An ampere is the standard unit for measuring the flow of electric current. Therefore, a service size of 28 KVA means that the system can tolerate 28,000 volts at one ampere or 28 KW (W=VA, where W=watts; V=volts; and A=amperes).

Table 5-3: Brigham City Average Electric Usage 2003			
Type of Usage	**KWH per Year (Total)**	**KWH per Day (Total)**	**KW (Avg. per Hour)**
Residential	49,967,954	136,899	5,704
Commercial	45,210,306	123,864	5,161
Industrial	43,770,595	119,919	4,997
Total	138,948,855	380,682	15,862
Source: Brigham City Corporation			

According to the table above, commercial entities in Brigham City use, during a one-hour time period, an average of 5,161 KW. However, we know that most businesses are not open 24-hours and that usage levels are generally higher during daytime hours. Residences also have periods of peak usage during the day; for example, during the morning hours when families are getting ready for school and work or during the early evening hours.

During an 'average hour' the electric demand in Brigham City (for both residential and commercial uses) is 15,862 KW. However, as stated above, the peak hour demand[25] in 2003 was 29,220 KW. Clearly, electric demand is not constant through-out a 24-hour period and facilities must be planned to accommodate the peak hour demand generated by new development; facilities will be insufficient if they are planned to meet average demand only.

It is, therefore, critical to calculate the anticipated peak demand of new development and base impact fees on this peak demand. Since we know the total potential electric demand of existing and new development (because we know service size which limits the amount of electric flow), and we know the peak demand of existing development (based on Brigham City records), we can therefore calculate peak demand for new development.[26]

The potential KW demand (assuming all existing customers are at full usage for their service size), is as follows:

Table 5-4: Brigham City Potential Electrical Demand; Existing Development			
Type of Usage	**Number of Connections**	**Average Service Size (KVA)**	**Potential Peak Demand (KW)**
Residential	6,055	4	24,220
Commercial	775	28	21,700
Industrial	1	10,000	10,000
Total	6,831	na	55,920
Source: Brigham City Corporation			

Based on practical experience, as well as City electrical records, we know that consumers do not have

[25] 'Peak demand' is defined as the highest demand on record for a one-hour period.

[26] 'Potential demand' is defined as the demand that would occur if all connections were to operate at full capacity for a one-hour period; 'peak demand' is defined as the highest actual demand on record for a one-hour time period. Peak demand is therefore a portion, or percentage, of potential demand.

all their lights on, all of the appliances running, the Christmas lights turned on, etc., all at the same time. (This is referred to as load diversity.) This is reflected in the fact that the actual peak hour demand in Brigham City during 2003 was 29,220 KW. This actual peak hour demand represents 52.25 percent of service size capacity (or potential demand).

29,220 KW÷ 55,920 KW = 52.25% capacity factor

It is therefore reasonable to assume that new development will also require, on system wide average at peak demand, 52.25 percent of the potential electrical energy that could be provided based on KVA service sizes. Thus, a development's gross impact fee should be calculated based on 52.25 percent usage of the potential energy that could be consumed based on service size. This demand should then be applied to capital facility costs, on a fair share usage basis, in order to determine the fee.

Estimate of Physical Facilities Needed and Associated Cost

According to Brigham City's Light and Power 20-Year Master Plan:

> Brigham City's electric system consists of one, 138-44 kV transmission substation; six, 44-12.5 kV distribution substations; two hydroelectric plants and two 44 kV industrial substations. Brigham City made a large system expansion during the early 1980's where a redundant 25/33/52 MVA transformer was purchased at East Substation to eliminate the 44 kV back system from UP&L. In addition, the Northwest and Southwest Distribution substations were constructed and the 44 kV loop was completed around the City. In the early 1990's, the Jim Davis distribution substation was constructed. The electrical switchgear in the Lower and Upper Hydro plants was replaced during the early to mid-1990's.

The existing electric system, owned entirely by Brigham City, was funded in 1982 by a bond of $3 million (plus other funding means). The value of the existing system is $3,837,267.[27] The existing electric system provides 80,000 KW of electric power. Roughly 37.5 percent of capacity is used, with an excess of approximately 62.5 percent. This excess capacity can be used to support new development, according to NEI Electric Power Engineering, author of Brigham City's Electric and Light Master Plan. Approximately 62.5 percent of 80,000 KW is 50,000 KW.

According to the Master Plan, Brigham City needs to upgrade the existing system. The top five priorities, plus priority number seven, outlined within the Master Plan relate to upgrading and repairs to the existing power sources. Specifically, they are:

> Priority 1: The three 46 kV breakers at East Substation are at least 25 years old and are in marginal condition. During the last few years, components of the breakers have failed. Spare parts are nonexistent and there is no support from the original manufacturer. These three breakers need to be replaced immediately. (2003; Cost $210,000)

> Priority 2: The 138 kV oil circuit breaker at East Substation is a critical device for the supply of

[27] Brigham City Corporation Books – Depreciated value June 2003

power to the entire City. Several catastrophic failures of that type of breaker have occurred across the United States. Failure of that circuit breaker could result in a substantial outage to the entire system. This breaker is an extremely weak link in the City's ability to deliver power to its customers. Depending on the type of failure to the breaker, the entire City could be without power from several hours to several days. This is an unacceptable condition. (2004; Cost: $150,000)

Priority 3: The 138 kV transmission line switches at the East Substation need to be replaced with load interrupters. The existing switches are marginal, require a lot of maintenance and have a tendency to mis-operate. These switches are critical to Utah Power and Light's 138 kV transmission system as well as Brigham City's power delivery system. (2004; Cost: $80,000)

Priority 4: The protective relaying systems at Northwest, Southwest and West Substations should be upgraded to microprocessor based, multi-function relays. The existing discrete Basler relays have been problematic during the last few years and should be replaced. (2005 – 2006; Cost: $20,000)

Priority 5: The protective relays in the East Substation are the older discrete electro-mechanical relays except for the 44 kV breakers which have been replaced with the SEL-551 relays. The relays should be replaced. (2007; Cost: $25,000)

Priority 7: Supervisory Control and Data Acquisition ultimately needs to be installed at all substations. This should be phased in over the period of five years (2008 – 2012; $125,000)

Impact fees can only be calculated based on the demands generated by new development. The impact fee calculation cannot include costs associated with repairing existing deficiencies. Other funding sources will need to be considered to address priorities one through five and seven above.

Brigham City's Master Plan indicates its intention to build and expand new facilities in order to meet increasing demands of new development. The Electrical Master Plan references priorities (numbered six, and eight through 12) specific to accommodating new development as outlined below:

Priority 6: Load growth to the south will increase the loads on the Southwest Substation. First, the third feeder should be completed. Next, either a larger transformer is required or a second unit should be installed at Southwest Substation. This effort will result in an incremental 10,000 KW. (2008; Cost: $300,000)

Priority 8: Load Growth within the City will require 138-44 kV transformer additions at East Substation. Changing out of the two transformers due to capacity and age will be required during this time. Priority eight will increase total capacity by 20,000 KW. (2009 – 2010; Cost $1,000,000)

Priority 9: Expansion of Northwest Substation which will result in at least 10,000 KW increased capacity. (2013 – 2017; Cost $650,000)

Priority 10: Expansion of West Substation will result in an additional 10,000 KW of capacity.

(2013 – 2017; Cost $500,000)

Priority 11: New Distribution Substation will drive 20,000 KW of additional capacity. (2013 – 2017; Cost: $750,000)

Priority 12: 138 kV System Development will add 100,000 KW of capacity to the system. (2018 – 2022; Cost $5,000,000)

Priority twelve is somewhat questionable in terms of whether or not it will ultimately be implemented as outlined above. For this reason, the costs will not be included in the impact fee calculation. Impact fee calculation will need to be re-evaluated over time as priorities may be revised and updated.

Total cost for new infrastructure outlined above (excluding priority 12) is $3,200,000. Incremental infrastructure for new development will result in an increased 70,000 KW of capacity.

Proportionate Share Analysis – Gross Fee

The value of the existing system is $3,837,267. The existing electric system has a capacity of approximately 80,000 KW of electricity. Currently, approximately 37.5 percent of the capacity is used (assuming no redundancy), with excess capacity of 62.5 percent (or 50,000 KW). The value of the portion of the system representing excess capacity is $2,398,292 or 62.5 percent of $3,837,267.

The estimated cost of construction for priorities serving new development is $3,200,000 based on 70,000 KW.[28] When combining $2,398,292 with $3,200,000, the total cost to be borne by new development is $5,598,292 supplying a total of 120,000 KW (50,000 + 70,000). This construction is required to serve the demands of new development; therefore, the costs should be divided among new development. The cost per kilowatt is calculated as follows:

$5,598,292 ÷ 120,000 KW = $46.65 per KW

Impact Fee Study

By law, the cost of the impact fee analysis can be included in the calculation of impact fees. The estimated cost of the impact fee study is $5,000.[29]

$5,000 ÷ 120,000 KW = $0.04 per KW

[28] Based on Brigham City Light and Power 20-Year Plan Summary authored by John P. Nelson, P.E. of NEI Electric Power Engineering.

[29] $4,000 WEPC; $1,000 NEI

Calculation of Gross Impact Fee

The fee for development is calculated by multiplying the service size by the percentage of peak usage (capacity factor) by the capital cost per kilowatt hour. A value of $46.69/KW should be used for the gross impact fee. The service size may vary with each individual residential or commercial unit. Three examples are shown below:

Residential Development:

4 x 52.25% x $46.69 = $97.58

service size x capacity factor x cost per KW = gross impact fee

Commercial Development:

Single Phase:

5 x 52.25% x $46.69 = $121.98

Three-Phase (l):

75 x 52.25% x $46.69 = $1,829.66

Gross impact fees, based on service size, are summarized in the table below:

Table 5-5: Sample Gross Fee Calculations

Service Size	Cost per KW	Capacity Factor	Gross Impact Fee
Residential			
4 (100A 120/240V)	$46.69	52.25%	$97.58
5 (125A 120/240V)	$46.69	52.25%	$121.98
6 (150A 120/240V)	$46.69	52.25%	$146.37
8 (200A 120/240V)	$46.69	52.25%	$195.16
9 (225A 120/240V)	$46.69	52.25%	$219.56
16 (400A 120/240V)	$46.69	52.25%	$390.33
Single Phase Service Sizes (KVA)			
4 (100A 120/240V)	$46.69	52.25%	$97.58
5 (125A 120/240V)	$46.69	52.25%	$121.98
6 (150A 120/240V)	$46.69	52.25%	$146.37
8 (200A 120/240V)	$46.69	52.25%	$195.16
9 (225A 120/240V)	$46.69	52.25%	$219.56
16 (400A 120/240V)	$46.69	52.25%	$390.33
Three Phase Service Sizes (KVA)			
75	$46.69	52.25%	$1,829.66
112.5	$46.69	52.25%	$2,744.50
150	$46.69	52.25%	$3,659.33
225	$46.69	52.25%	$5,488.99
300	$46.69	52.25%	$7,318.66

Table 5-5: Sample Gross Fee Calculations			
Service Size	**Cost per KW**	**Capacity Factor**	**Gross Impact Fee**
500	$46.69	52.25%	$12,197.76
750	$46.69	52.25%	$18,296.64
1000	$46.69	52.25%	$24,395.53
1500	$46.69	52.25%	$36,593.29

Fee Adjustment for Other Contributing Revenues

There is no existing debt service on any of Brigham City's electric facilities. Therefore, no adjustments need to be made for any offsetting future contributions by new development through local bonding. Within the past five years, the General Fund has not been used to pay for electric capital expenditures. Therefore, it is assumed that the General Fund will not be used in the future for these types of payments and that there will be no 'double payments' by new development. Brigham City funds on-going electric facility maintenance through electric rates and fees maintained in an Electric Enterprise Fund.

The City may choose to require developers to make appropriate electric utility contributions contiguous to the development as a condition of development approval ('exactions'). Depending on the nature of these requirements, the improvements, or a portion of them, may be used to offset the full impact fee amount.[30] If, however, the developer is given some other sort of compensation (i.e., density bonus) for the electric utility contribution, then no credit should be made against the impact fees (or double payment to the developer will occur).

Although Brigham City currently has no debt service on its electric utilities, it is likely that the City will need to incur some debt in the future in order to finance the new substations. New development cannot be charged the full impact fee and then also be required to pay against some future debt service; if so, double payment will occur. If a bond is issued, then a credit against the gross fee must be made in order to reflect the net present value of future payments made against the bond by new development. At the time the bond is issued, the appropriate credits can and must be calculated; the credits will decrease each year over the lifetime of the bond.

Special Provisions and Accounting

The impact fees calculated above represent the maximum supportable impact fees for electric utility facilities that are allowed by law. Brigham City may choose to adopt any impact fee that is less than that described above. Currently, Brigham City's electric department is returning a 21 percent profit. It is possible the impact fee could impede large commercial development. For example, a commercial entity with opportunity to switch from using a generator back-up, to expanding and using Brigham City's electric system might choose to continue generator use due to impact fees. Overall, the profit return on this commercial customer likely would have exceeded impact fee revenues.

[30] If a developer is required to construct a portion of any of the major facilities listed in the Electrical Master Plan which are included in the calculation of impact fees, then a credit must be given against the impact fee for that amount.

Brigham City may also choose to enact a provision that exempts low income housing and other development activities with broad public purposes from impact fees and establish a source or sources of funds (other than impact fees) to pay the electric utility development costs of that specific activity.

All impact fee revenues received should be placed in a special impact fees account to pay for the electric utility facilities.

BRIGHAM CITY

IMPACT FEES FOR STORM DRAINS
Chapter 6

General Background

The Impact Fees Act allows cities and towns to charge fees to mitigate the impacts of new development on "storm water, drainage, and flood control facilities" [Utah Code 11-36-102(11) (c)] based on the capital facilities that will be required to meet the needs of new development as set forth in the City's Capital Facilities Plan ("CFP") for storm drains.

Brigham City's current storm drainage system conveys storm water away from the inhabited areas of the City. The three main elements of the system include collection, detention, and discharge.

There are currently 20 detention basins within Brigham City, with an additional 35 planned to accommodate future development.

The pipe sizes for the existing system vary from 12" to 42" in diameter. These pipes convey surface water collected from catch basins to detention facilities and then to Box Elder Creek or to the natural drainage features west of the City.

Several channels exist in Brigham City's current system. The majority of drainage is routed to existing watercourses, to Box Elder Creek, or to the Black Slough.[31]

Estimate of Demand (Need) for Facilities

Brigham City currently has 18,742 residents. It is estimated at buildout residents will equal a population of 27,682, resulting in additional development of residential, commercial or industrial land.

As outlined below, Brigham City's current population equates to 6,744 ERUs (Equivalent Residential Units). At buildout (2030 projected), ERUs are expected to reach 9,971—an increase of 3,227.

Table 6-1: Brigham City Projected Population and ERU Growth

Year	Population	ERUs	Total Incremental ERUs
2004	18,742	6,744	
2005	19,035	6,853	108
2006	19,333	6,960	216
2007	19,635	7,069	324
2008	19,942	7,179	435
2009	20,254	7,292	547

[31] Brigham City Corporation Storm Drainage Master Plan Update, May 1997, section 3.0 Existing Storm Drainage Facilities, page 5.

Table 6-1: Brigham City Projected Population and ERU Growth			
Year	**Population**	**ERUs**	**Total Incremental ERUs**
2010	20,571	7,406	661
2011	20,893	7,521	777
2012	21,220	7,639	895
2013	21,551	7,759	1,014
2014	21,888	7,880	1,136
2015	22,231	8,003	1,259
2016	22,578	8,128	1,384
2017	22,932	8,255	1,511
2018	23,290	8,384	1,640
2019	23,655	8,516	1,771
2020	24,024	8,649	1,905
2021	24,400	8,784	2,040
2022	24,782	8,921	2,177
2023	25,169	9,061	2,317
2024	25,563	9,203	2,458
2025	25,963	9,347	2,602
2026	26,369	9,493	2,749
2027	26,781	9,642	2,898
2028	27,200	9,792	3,048
2029	27,625	9,946	3,202
2030	27,682	9,971	3,227
Source: Bear River Association of Governments; Jones & Associates Consulting Engineers			

One ERU assumes the hard surface for a roof, driveway and front walk for an average residence would be approximately 3,000 square feet.[32]

Incremental development in Brigham City will increase storm water runoff and the need for increased drainage facilities due to the additional impervious surfaces such as streets, sidewalks, driveways, roofs, etc. Estimated physical facilities required to meet incremental demand are identified in the next section.

Estimate of Physical Facilities Needed and Associated Cost

Storm drain facilities required to meet increased demand have been outlined in detail in the Brigham City Corporation 2004 Storm Drain Capital Facilities Plan Update, Project Cost Estimates, dated June 2004.

[32] Jones & Associates Consulting Engineers

The physical facilities needed to serve new development are anticipated to cost $3,404,300, as outlined in detail in Brigham City's Storm Drain Capital Facilities Plan Update. A summary of these costs is shown in Table 6-2.

Table 6-2: Brigham City Storm Drain Project Cost Estimates Summary for New Development

Project #	Project Description	Cost
9	Storm Drain Improvements	$38,900
10	Storm Drain Improvements	$18,500
11	Storm Drain Extension from 800 West to Canal	$800
21	Storm Drain Improvements	$17,600
37	Outfall line to Black Slough	$119,700
45	Detention Basin & Storm Drain Improvements	$229,100
46	Detention Basin & Storm Drain Improvements	$205,400
47	Detention Basin & Storm Drain Improvements	$134,400
48	Detention Basin & Storm Drain Improvements	$89,000
49	Detention Basin & Storm Drain Improvements	$579,800
50	Storm Drain Improvements	$9,500
51	Storm Drain Improvements	$14,100
52	Storm Drain Improvements	$73,400
53	Detention Basin & Storm Drain Improvements	$275,300
54	Detention Basin & Storm Drain Improvements	$185,000
55	Detention Basin & Storm Drain Improvements	$366,600
59	Storm Drain Improvements	$5,500
62	Detention Basin & Storm Drain Improvements	$282,700
76	Detention Basin & Storm Drain Improvements	$41,100
77	Detention Basin & Storm Drain Improvements	$69,300
78	Detention Basin & Storm Drain Improvements	$84,500
79	Detention Basin & Storm Drain Improvements	$87,100
80	Detention Basin & Storm Drain Improvements	$97,100
81	Detention Basin & Storm Drain Improvements	$46,900
83	Detention Basin & Storm Drain Improvements	$113,400
87	Drainage Outfall to Black Slough	$22,700
88	Detention Basin & Storm Drain Improvements	$49,800
89	Detention Basin & Storm Drain Improvements	$73,200
96	Storm Drain Improvements	$73,900
Total		$3,404,300

Source: Jones & Associates Consulting Engineers

The $3,404,300 includes estimated additional facilities needed to accommodate future demand. These costs do not address current system deficiencies, nor do they include developer base costs which are identified in Brigham City's 2004 Storm Drain Capital Facilities Plan Update. New development cannot be expected to fund existing system inadequacies; therefore, existing system deficiencies will require funding mechanisms other than impact fees.

Proportionate Share Analysis – Gross Fee

The $3,404,300 (2004 $'s) cost for the expansion of storm drain facilities to accommodate new development must be paid for by new development. The prorated share of storm drain facilities per incremental ERU is $1,054.63.

$3,404,300 ÷ 3,227 incremental ERUs = $1,054.94 per ERU

Buy-In to Existing Facilities

Conversations with Brigham City management as well as Jones & Associates Consulting Engineers have ascertained while there are some deficiencies in the existing system, there also exists excess capacity. Therefore, in addition to the costs outlined above, new development needs to buy-in to the existing system's excess capacity. Detailed in the table below are the three existing drainage areas with excess capacity. The total amount for new development to buy-in to is $451,159.

Table 6-3: Brigham City Storm Drain Excess Capacity

West Stake Drainage Area	Total Drainage Area (acres)	200.1
	Future Development Area (acres)	34.87
	Percent Future Development	17%
	Current 'Book Value' of the Existing System	
	Detention Basin	$100,000
	Land	$70,000
	Piping	$232,432
	Total	$402,432
	'Book Value' attributed to New Development	$70,129
West Forest Street Drainage Area	Total Drainage Area (acres)	378.66
	Future Development Area (acres)	246.33
	Percent Future Development	65%
	Current 'Book Value' of the Existing System	
	Piping	$546,186
	Total	$546,186
	'Book Value' attributed to New Development	$355,311
Golf Course Drainage Area	Total Drainage Area (acres)	239.36
	Future Development Area (acres)	16
	Percent Future Development	7%
	Current 'Book Value' of the Existing System	

Table 6-3: Brigham City Storm Drain Excess Capacity		
	Detention Basin	$75,000
	Piping	$309,761
	Total	$384,761
	'Book Value' attributed to New Development	$25,719
Total 'Book Value' Attributed to New Development		*$451,159*
Source: Jones & Associates Consulting Engineers		

The prorated share of buy-in to existing storm drain facilities per incremental ERU is $139.81.

$451,159 ÷ 3,227 incremental ERUs = $139.81 per ERU

Impact Fee Study

By law, the cost of the impact fee analysis can be included in the calculation of impact fees. The estimated cost of the impact fee study is $18,700.[33]

$18,700 ÷ 3,227 incremental ERUs = $5.79 per ERU

Summary of Gross Fee

The storm drain gross impact fee for new development in Brigham City is summarized in table 6-4:

Table 6-4: Summary of Gross Fee		
	Total Cost	**Per ERU**
New Facilities required for New Development	$3,404,300	$1,054.94
Buy-in to Existing Facilities	$451,159	$139.81
Impact Fee Analysis	$18,700	$5.79
Total	$3,874,159	$1,200.55
Note: One ERU equals 3,000 square feet of impervious surface[34]		

One ERU equals 3,000 square feet of impervious surface. The fee for a residence will be equal to that of one ERU, or $1,200.55.

Fee Payment Calculation

Fees for Non-Residential Development

For all non-residential development including commercial and industrial development, the impact fee will be based on a site-specific hard surfacing calculation. When translating the $1,200.55 per 3,000

[33] $4,000 WEPC; $14,700 Jones & Associates Consulting Engineers

[34] Jones & Associates Consulting Engineers

impervious SF, (one ERU), to a cost per square foot, the fee equates to $0.40 per impervious square foot.[35] The quantity of hard surfacing will be assessed a gross impact fee of $0.40 per impervious square foot calculated for the site.

The impact fee of $0.40 per square foot of impervious surfacing applies to all types of development. In industrial and commercial developments, on-site detention is required with a storm water discharge rate not to exceed 0.2 cfs/gross acre. Detention calculations in these developments use the 10-year storm event as the basis for their basin sizing. City-built regional detention basins are sized for the 100-year storm event and will carry flows in excess of the 10-year event. The impact fee of $0.40 per square foot of impervious surfacing charged to commercial and industrial developments is used to pay for both infrastructures to receive the storm water generated by the development as well as regional facilities to receive storm water overflow from the development during high-flow storm events.

Fees for Multiple-Family Units

Multi-family unit dwellings generally have more impervious surface per acre than single-family residential. On average, multi-family units generate 1.2 times[36] the hard surface area of single-family residential units.

Using the base calculated fee of $0.40 per square foot of hard surfacing and a 1.2 multiplier for multiple-family units, the impact fee for multiple-family developments is $1,440.00 per unit.

$0.40 x 3,000 s.f. ÷ unit x 1.2 factor for additional impervious area = $1,440 per unit

Due to the variance of hard surfacing in multiple-family developments, the base impact fee will be calculated using both $1,440.00 per dwelling unit and $0.40 per impervious square foot as calculated for non-residential impact fees. The lower fee of the two will be assessed. In cases where sufficient on-site detention is constructed, the storm water discharge credits outlined in the fees for non-residential development will apply.

Summary of Storm Drain Impact Fee for Categorized Development

Table 6-5 shows a summary of the storm drain gross impact fee for each of the three categories of development:

Table 6-5: Summary of Storm Drain Gross Impact Fee by Category of Development

Type of Development	Impact Fee
Single-Family Residential (Base Fee)	$1,200.55
Multiple-Family Residential	* $1,440.00 / Unit
Non-Residential	$0.40 / s.f. Hard Surfacing
** The Non-Residential fee calculation method may also be applied and the lower of the two gross impact fees assessed*	

[35] $1,200.55 / 3,000 impervious SF = $0.40 per SF

[36] Design and Construction of Sanitary and Storm Sewers, 1979, ASCE, page 51

Adjust Fee for Other Contributing Revenues

There is no existing debt service on the storm drain system. Therefore, no adjustments need to be made for any offsetting future contributions by new development through local bonding. Within the past five years, the general fund has not been used to pay for storm drain expenditures. Therefore, it is assumed that the general fund will not be used in the future for these types of payments and that there will be no "double payments" by new development.

Special Provisions and Accounting

The impact fees calculated above represent the maximum supportable impact fees for storm drains that are allowed by law. Brigham City may choose to adopt any impact fee that is less than that described above.

All impact fee revenues received should be placed in a special impact fees account to pay for Brigham City's storm drain facilities. Impact fees may not be placed in the general fund account. Impact fees should also be adjusted annually to account for inflationary cost impacts.

APPENDICES

COMPARATIVE IMPACT FEES FOR UTAH, SALT LAKE, DAVIS, & WEBER COUNTIES

Box Elder County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Brigham City														
Single Family	$1,521.71		$176.52		$840.96	$1,763.48					$136.97			07/15/04
Two Family /Condo	$1,520.01		$139.03		$840.96	$1,322.05					$120.27			07/15/04
Multiple Family	$998.46		$171.04		$546.62	$1,153.67					$89.81			07/15/04
Mobile Home	$994.36		$171.04		$546.62	$1,251.38					$103.13			07/15/04
Non Residential														
Commercial (per sf)	***		$0.0480		*						$0.0300			07/15/04
Industrial (per sf)	***		$0.0480		*						$0.0930			07/15/04
Institutional (per sf)	***		$0.0300		*						$0.0043			07/15/04
Other (Airport)	***		$0.0300		*						$0.0020			07/15/04

**Calculate future units by Table 709.1 of current International Plumbing code, divide by 24 to arrive at the equivalent ERUs then multiply the total by $840.95*

***Calculate future unit value in gpm and divide by 24 to arrive at the equivalent ERUs, then multiply the value by $1,520.21*

Cache County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Hyde Park City														
Single Family	$1,875.00				$1,711.00	$1,098.00			$1,154.00				$5,838	
Millville City														
Single Family	$3,000.00					$2,000.00			$500.00				$5,500	
North Logan City														
Residential														
Single Family Detached						$833.00			$446.00				$1,279	04/19/04
All Other Housing Types						$644.00			$334.00				$978	04/19/04
Up to 1"	$2,784.00				$737.00								$3,521	04/19/04
1.5"	$5,568.00				$1,474.00								$7,042	04/19/04
2"	$8,909.00				$2,358.00								$11,267	04/19/04
Non Residential														
Commercial < 75,000									$444.00				$444	04/19/04
Commercial 75,000 -150,000									$390.00				$390	04/19/04
Commercial > 150,000									$210.00				$210	04/19/04
Office < 17,500									$1,130.00				$1,130	04/19/04
Office 17,500 - 37,500									$905.00				$905	04/19/04
Office > 37,500									$761.00				$761	04/19/04
Business Park									$660.00				$660	04/19/04
Light Industrial									$320.00				$320	04/19/04
Warehousing									$224.00				$224	04/19/04
Manufacturing									$176.00				$176	04/19/04

Cache County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
River Heights City														
Area Within City	$1,400.00				$1,056.00	$790.00			$350.00				$3,596	04/20/04
Area Within City (1 Inch Connection)	$5,470.00				$1,056.00	$790.00			$350.00				$7,666	04/20/04
600 South Area	$2,685.00				$2,339.00	$790.00			$350.00				$6,164	04/20/04
600 South Area (1 Inch Connection)	$10,490.00				$2,339.00	$790.00			$350.00				$13,969	04/20/04
Riverdale Area	$1,400.00				$0.00	$790.00			$350.00				$2,540	04/20/04
Riverdale Area (1 Inch Connection)	$5,470.00				$0.00	$790.00			$350.00				$6,610	04/20/04
800 South Area	$2,532.00				$1,447.00	$790.00			$350.00				$5,119	04/20/04
800 South Area (1 Inch Connection)	$9,890.00				$1,447.00	$790.00			$350.00				$12,477	04/20/04

Davis County														
	Culinary Water	Secondary Water	Storm Drainage	Special Service District (Sewer)	Sewer	Parks / Open Space	Law Enforcement	Fire / Emergency Service	Roadway	Flood Control Basin Fee	Power	Garbage	Totals	Date Fee Updated
Centerville														
Residential														
Single Family			$2,000.00	$1,486.00		$1,200.00							$4,686	04/19/04
Non Residential														
Commercial			$4,000.00	$1,486.00									$5,486	04/19/04
Industrial			$4,000.00	$1,486.00									$5,486	04/19/04
Clearfield														
Residential														
Single Family	$1,493.00		$528.00	$1,500.00	$473.00	$853.00							$4,847	04/16/04
Multi-Family	$1,056.00		$280.00	$1,500.00	$335.00	$604.00							$3,775	04/16/04
Non Residential (Per Gross Acre)														
Commercial			$4,134.00										$4,134	04/16/04
Office			$3,819.00										$3,819	04/16/04
Light Industry			$3,819.00										$3,819	04/16/04
.75 Inch	$1,493.00			$1,500.00	$473.00								$3,466	04/16/04
1 Inch	$3,732.00			$1,500.00	$1,183.00								$6,415	04/16/04
1.5 Inch	$7,465.00			$1,500.00	$2,367.00								$11,332	04/16/04
2 Inch	$11,944.00			$1,500.00	$3,787.00								$17,231	04/16/04
3 Inch	$22,395.00			$1,500.00	$7,101.00								$30,996	04/16/04
4 Inch	$37,326.00			$1,500.00	$11,835.00								$50,661	04/16/04
Clinton														
Residential														
Single Family	$423.00		$1,320.00	$1,500.00		$1,396.00	$50.00	$32.00	$466.00				$5,187	04/19/04
Multi-Family	$321.00		$303.00	$1,500.00		$834.00	$30.00	$19.00	$283.00				$3,290	04/19/04

Davis County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Clinton (continued…)														
Non Residential							Per 1000 sf	Per 1000 sf	Per 1000 sf					
Commercial < 50,000							$483.00	$163.00	$1,890.00				$2,536	04/19/04
Commercial 50,001 - 100,000							$420.00	$142.00	$1,665.00				$2,227	04/19/04
Commercial > 100,000							$362.00	$126.00	$1,451.00				$1,939	04/19/04
Office < 25,000							$194.00	$230.00	$1,961.00				$2,385	04/19/04
Office >25,000							$465.00	$216.00	$1,239.00				$1,920	04/19/04
Business Park							$135.00	$180.00	$589.00				$904	04/19/04
Light Industrial							$74.00	$131.00	$493.00				$698	04/19/04
Warehousing							$52.00	$72.00	$278.00				$402	04/19/04
Farmington														
East Area														
Residential			$563.00	$1,700.00		$2,097.00	$167.00	$133.00	$516.00				$5,176	04/19/04
Single Family			$306.00	$1,700.00		$1,371.00	$109.00	$87.00	$314.00				$3,887	04/19/04
Multi Family														
Non Residential														
Commercial < 50,000			$355.00	$1,700.00			$140.00	$184.00	$1,662.00				$4,041	04/19/04
Commercial 50,001 - 100,000			$355.00	$1,700.00			$123.00	$161.00	$1,465.00				$3,804	04/19/04
Commercial 100,001 - 200,000			$355.00	$1,700.00			$107.00	$143.00	$1,276.00				$3,581	04/19/04
Commercial > 200,000			$355.00	$1,700.00			$93.00	$129.00	$1,103.00				$3,380	04/19/04
Office < 25,000			$355.00	$1,700.00			$145.00	$260.00	$1,725.00				$4,185	04/19/04
Office 50,001 - 100,000			$355.00	$1,700.00			$64.00	$230.00	$768.00				$3,117	04/19/04
Office > 100,000			$355.00	$1,700.00			$51.00	$216.00	$611.00				$2,933	04/19/04
Business Park			$355.00	$1,700.00			$43.00	$203.00	$518.00				$2,819	04/19/04
Light Industrial			$355.00	$1,700.00			$36.00	$149.00	$434.00				$2,674	04/19/04

Davis County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Farmington (continued…)														
Warehousing			$355.00	$1,700.00			$20.00	$82.00	$245.00				$2,402	04/19/04
West Area														
Residential														
Single Family			$554.00	$1,700.00		$2,097.00	$167.00	$133.00	$516.00				$5,167	04/19/04
Multi Family			N/A	$1,700.00		$1,371.00	$109.00	$87.00	$314.00				$3,581	04/19/04
Non Residential														
Commercial < 50,000			$327.00	$1,700.00			$140.00	$184.00	$1,662.00				$4,013	04/19/04
Commercial 50,001 - 100,000			$327.00	$1,700.00			$123.00	$161.00	$1,465.00				$3,776	04/19/04
Commercial 100,001 - 200,000			$327.00	$1,700.00			$107.00	$143.00	$1,276.00				$3,553	04/19/04
Commercial > 200,000			$327.00	$1,700.00			$93.00	$129.00	$1,103.00				$3,352	04/19/04
Office < 25,000			$327.00	$1,700.00			$145.00	$260.00	$1,725.00				$4,157	04/19/04
Office 25,001 - 50,000			$327.00	$1,700.00			$91.00	$244.00	$1,090.00				$3,452	04/19/04
Office 50,001 - 100,000			$327.00	$1,700.00			$64.00	$230.00	$768.00				$3,089	04/19/04
Office > 100,000			$327.00	$1,700.00			$51.00	$216.00	$611.00				$2,905	04/19/04
Business Park			$327.00	$1,700.00			$43.00	$203.00	$518.00				$2,791	04/19/04
Light Industrial			$327.00	$1,700.00			$36.00	$149.00	$434.00				$2,646	04/19/04
Warehousing			$327.00	$1,700.00			$20.00	$82.00	$245.00				$2,374	04/19/04
.75 Inch	$2,156.00												$2,156	04/19/04
1 Inch	$3,665.00												$3,665	04/19/04
1.5 Inch	$7,114.00												$7,114	04/19/04
2 Inch	$11,426.00												$11,426	04/19/04
3 Inch	$23,716.00												$23,716	04/19/04
4 Inch	$36,652.00												$36,652	04/19/04

Davis County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Kaysville														
Residential				Central Davis SD										
Single Family Detached				$1,700.00		$735.00							$2,435	04/19/04
All Other Residential (per unit)				$1,700.00		$450.00							$2,150	04/19/04
.75 Inch	$550.00												$550	04/19/04
1 Inch	$1,370.00												$1,370	04/19/04
1.5 Inch	$2,745.00												$2,745	04/19/04
2 Inch	$4,390.00												$4,390	04/19/04
3 Inch	$8,235.00												$8,235	04/19/04
4 Inch	$13,725.00												$13,725	04/19/04
100 Amp											$90.00		$90	04/19/04
125 Amp											$115.00		$115	04/19/04
150 Amp											$135.00		$135	04/19/04
200 Amp											$185.00		$185	04/19/04
225 Amp											$205.00		$205	04/19/04
400 Amp											$365.00		$365	04/19/04
Non Residential														
Commercial Single Phase														
100 Amp											$400.00		$400	04/19/04
125 Amp											$500.00		$500	04/19/04
150 Amp											$600.00		$600	04/19/04
200 Amp											$800.00		$800	04/19/04
400 Amp											$1,605.00		$1,605	04/19/04
Commercial 3 Phase														
125 amp											$870.00		$870	04/19/04
150 Amp											$1,040.00		$1,040	04/19/04

Davis County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Kaysville (continued…)														
200 Amp											$1,390.00		$1,390	04/19/04
400 Amp											$2,780.00		$2,780	04/19/04
600 Amp											$4,170.00		$4,170	04/19/04
800 Amp											$5,560.00		$5,560	04/19/04
1000 Amp											$6,950.00		$6,950	04/19/04
1200 Amp											$8,335.00		$8,335	04/19/04
1600 Amp											$11,115.00		$11,115	04/19/04
2000 Amp											$13,895.00		$13,895	04/19/04
1500 Amp (1038 KVA)											$17,375.00		$17,375	04/19/04
Commercial 3 Phase (208 Volt)														
125 Amp											$755.00		$755	04/19/04
150 Amp											$905.00		$905	04/19/04
200 Amp											$1,205.00		$1,205	04/19/04
400 Amp											$2,410.00		$2,410	04/19/04
600 Amp											$3,615.00		$3,615	04/19/04
800 Amp											$4,820.00		$4,820	04/19/04
1000 Amp											$6,025.00		$6,025	04/19/04
1200 Amp											$1,230.00		$1,230	04/19/04
1600 Amp											$9,640.00		$9,640	04/19/04
2000 Amp											$12,050.00		$12,050	04/19/04
2500 Amp											$15,065.00		$15,065	04/19/04
Commercial 3 Phase (480 Volt)														
125 Amp											$1,740.00		$1,740	04/19/04
150 Amp											$2,090.00		$2,090	04/19/04
200 Amp											$2,780.00		$2,780	04/19/04

Davis County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Kaysville (continued…)														
400 Amp											$5,555.00		$5,555	04/19/04
600 Amp											$8,335.00		$8,335	04/19/04
800 Amp											$11,115.00		$11,115	04/19/04
1000 Amp											$13,895.00		$13,895	04/19/04
1200 Amp											$16,675.00		$16,675	04/19/04
1600 Amp											$22,245.00		$22,245	04/19/04
2000 Amp											$27,805.00		$27,805	04/19/04
2500 Amp											$34,750.00		$34,750	04/19/04
Syracuse														
Single Family	$475.00	$920.00	$.0522 per sf*	$1,500.00		$827.00			$1,131.00			$80.00	$4,933	04/23/04
Woods Cross														
Residential														
Single Family	$1,794.00		$884.00	$1,486.00		$1,357.00							$5,521	04/19/04
Multi-Family	$1,794.00		$401.00	$1,486.00		$933.00							$4,614	04/19/04
Nonresidential			Per Acre										$0	04/19/04
.75 Inch	$1,794.00		$6,285.00										$8,079	04/19/04
1 Inch	$4,485.00		$6,285.00										$10,770	04/19/04
1.5 Inch	$8,970.00		$6,285.00										$15,255	04/19/04
2 Inch	$14,352.00		$6,285.00										$20,637	04/19/04
3 Inch	$26,910.00		$6,285.00										$33,195	04/19/04
4 Inch	$44,850.00		$6,285.00										$51,135	04/19/04

Salt Lake County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Bluffdale														
Residential	Per Dwelling													
>1 Acre	$2,200.00		$526.00	$3,079.00		$2,355.00		$238.00	$1,026.00				$9,424	04/18/04
< 1 Acre	$2,200.00		$421.00	$1,936.00		$2,355.00		$238.00	$1,026.00				$8,176	04/18/04
Non Residential	Per Connection		Per Acre	Per 1000 sf				Per Acre	Per 1000 sf					
Office less than 50,000 sf	$4,800.00		$1,788.00	$672.00				$105.64	$614.78				$7,980	04/18/04
Office greater than 50,000 sf	$4,800.00		$1,788.00	$672.00				$105.64	$548.02				$7,914	04/18/04
Shopping Center less than 50,000 sf	$4,800.00		$1,788.00	$4,680.00				$105.64	$1,164.00				$12,538	04/18/04
Light Industry	$4,800.00		$1,894.00	$672.00				$105.64	$1,003.23				$8,475	04/18/04
Draper														
Residential							Per Unit							
Single Family	$1,413.00		$1,215.00	$3,079.00	$1,160.50	$3,435.00	$150.00	$392.00	$1,128.00				$11,973	04/19/04
Multiple Family (Per Unit)	$1,082.00		$1,215.00	$1,936.00		$3,435.00	$150.00	$226.00	$693.00				$8,737	04/19/04
Non Residential			Per Acre	Per 1000 sf			Per sf	Per 1000 sf	Per sf					
Shopping Center/Retail			$3,312.00	$4,680.00			$0.08	$1,878.00	$6.64				$9,877	04/19/04
Office			$1,495.00	$672.00			$0.08	$293.00	$1.52				$2,462	04/19/04
Industrial			$3,312.00	$672.00			$0.08	$73.00	$0.90				$4,058	04/19/04
.75 Inch	$1,413.00												$1,413	04/19/04
1 Inch	$3,533.00												$3,533	04/19/04
1.5 Inch	$7,067.00												$7,067	04/19/04
2 Inch	$11,308.00												$11,308	04/19/04
3 Inch	$21,203.00												$21,203	04/19/04

Salt Lake County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Draper (continued…)														
4 Inch	$35,339.00												$35,339	04/19/04
6 Inch	$70,679.00												$70,679	04/19/04
8 Inch	$113,086.00												$113,086	04/19/04
Murray														
Residential														
Single Family	$2,677.00				$1,840.00								$4,517	04/16/04
Multi-Family (Per units)	$1,472.00				$1,380.00								$2,852	04/16/04
Non Residential														
Hotel/ Motel (Per # of rooms)	$669.00				$920.00								$1,589	04/16/04
Rest Homes/ Hospitals (Per # of rooms)	$937.00				$920.00								$1,857	04/16/04
1 Inch	$2,677.00				$1,840.00								$4,517	04/16/04
1.5 Inch	$5,355.00				$3,680.00								$9,035	04/16/04
2 Inch	$8,568.00				$5,828.00								$14,396	04/16/04
3 Inch	$16,064.00				$11,040.00								$27,104	04/16/04
4 Inch	$26,744.00				$18,400.00								$45,144	04/16/04
6 Inch	$53,548.00				$36,800.00								$90,348	04/16/04
8 Inch	$85,676.00				$58,280.00								$143,956	04/16/04
10 Inch	$133,869.00				$92,000.00								$225,869	04/16/04
Riverton														
Residential			Per acre											
Single Family (.75 Inch)	$1,717.00	$1,300.00	$3,755.00			$2,826.00	$109.00		$2,265.00				$11,972.00	04/16/04
Single Family (1 Inch)	$2,986.00	$1,300.00	$3,755.00			$2,826.00	$109.00		$2,265.00				$13,241.00	04/16/04

Salt Lake County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Multi-Family (.75 Inch)	$1,717.00	$1,300.00	$3,755.00			$2,826.00	$109.00		$1,865.00				$11,572.00	04/16/04
Riverton (continued…)														
Multi-Family (1 Inch)	$2,986.00	$1,300.00	$3,755.00			$2,826.00	$109.00		$1,865.00				$12,841.00	04/16/04
Non Residential							Per sq ft						$0.00	04/16/04
Commercial (.75 Inch)	$1,717.00	$1,300.00	$3,755.00				$0.32		$4.93				$6,777.25	04/16/04
Commercial (1 Inch)	$2,988.00	$1,300.00	$3,755.00				$0.32		$4.93				$8,048.25	04/16/04
Office (.75 Inch)	$1,717.00	$1,300.00	$3,755.00				$0.32		$1.48				$6,773.80	04/16/04
Office (1 Inch)	$2,986.00	$1,300.00	$3,755.00				$0.32		$1.48				$8,042.80	04/16/04
Industrial (.75 Inch)	$1,717.00	$1,300.00	$3,755.00				$0.32		$1.48				$6,773.80	04/16/04
Industrial (1 Inch)	$2,986.00	$1,300.00	$3,755.00				$0.32		$1.48				$8,042.80	04/16/04
South Jordan														
Residential														
Residential A-1			$1,524.00			$4,346.00	$80.00	$146.00	$1,389.00				$7,485	02/10/04
Residential A-5			$1,524.00			$4,346.00	$80.00	$146.00	$1,389.00				$7,485	02/10/04
Residential R-1.8			$1,431.00			$4,346.00	$80.00	$146.00	$1,389.00				$7,392	02/10/04
Residential R-2.5			$1,443.00			$4,346.00	$80.00	$146.00	$1,389.00				$7,404	02/10/04
Residential R-3			$1,158.00			$4,346.00	$80.00	$146.00	$1,389.00				$7,119	02/10/04
Residential RM (1)			$772.00			$2,850.00	$80.00	$146.00	$1,389.00				$5,237	02/10/04
Residential RM (2)			$450.00			$2,596.00	$80.00	$389.00	$882.00				$4,397	02/10/04
Non Residential														
Hotel/Motel			$118.00			$87.00	$107.00	$106.00	$1,243.00				$1,661	02/10/04
Office Uses (per sq ft)			$0.297			$0.095	$0.021	$0.023	$1.015				$1.45	02/10/04
Commercial Uses (per sq ft)			$0.551			$0.176	$0.287	$0.313	$5.523				$6.85	02/10/04
Industrial Uses(per sq ft)			$0.335			$0.101	$0.016	$0.136	$0.547				$1.14	02/10/04
Water Connection														
.75 Inch	$2,651.00												$2,651	02/10/04

Salt Lake County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
1 Inch	$5,646.00												$5,646	02/10/04
South Jordan (continued…)														
1.25 Inch	$10,153.00												$10,153	02/10/04
1.5 Inch	$16,409.00												$16,409	02/10/04
1.75 Inch	$24,600.00												$24,600	02/10/04
2 Inch	$34,965.00												$34,965	02/10/04
2.5 Inch	$62,878.00												$62,878	02/10/04
3 Inch	$101,580.00												$101,580	02/10/04
4 Inch	$216,468.00												$216,468	02/10/04
6 Inch	$628,807.00												$628,807	02/10/04
West Jordan														
Residential			Per Acre											
Detached 3,600 + SF	$3,840.00		$1,286.00		$2,757.00	$1,921.00	$123.00	$290.00	$1,399.00				$11,616	03/22/01
Detached 3,000-3,599 SF	$3,385.000		$5,146.000		$2,430.000	$1,693.000	$108.000	$256.000	$1,233.000				$14,251	03/22/01
Detached 2,400-2,999 SF	$3,228.000		$5,146.000		$2,317.000	$1,614.000	$103.000	$244.000	$1,175.000				$13,827	03/22/01
Detached 2,000-2,399 SF	$2,843.00		$5,146.000		$2,041.00	$1,422.00	$91.00	$215.00	$1,034.00				$12,792	03/22/01
Detached < 2000	$2,344.00		$5,146.000		$1,683.00	$1,172.00	$75.00	$117.00	$853.00				$11,390	03/22/01
Attached Housing Units	$2,265.00		$5,146.000		$1,626.00	$1,133.00	$72.00	$171.00	$833.00				$11,246	03/22/01
Non Residential			Per Acre				Per sq ft	Per sq ft	Per sq ft					
Commercial 50,000 or less			$5,146.000				$0.16	$0.13	$2.59				$5,148.88	03/22/01
Commercial 50,001-100,000 SF			$5,146.000				$0.14	$0.12	$2.25				$5,148.51	03/22/01

Salt Lake County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Commercial 100,001-200,000 SF			$5,146.000				$0.12	$0.10	$1.94				$5,148.16	03/22/01
Commercial >200,000 SF			$5,146.000				$0.11	$0.09	$1.66				$5,147.86	03/22/01
West Jordan (continued…)														
Office <10,000 SF			$5,146.000				$0.36	$0.21	$1.48				$5,148.05	03/22/01
Office 10,000-25,000 SF			$5,146.000				$0.17	$0.19	$1.19				$5,147.55	03/22/01
Office 25,000-50,000 SF			$5,146.000				$0.10	$0.18	$1.02				$5,147.30	03/22/01
Office >50,000 SF			$5,146.000				$0.07	$0.17	$0.86				$5,147.10	03/22/01
Business Park			$5,146.000				$0.05	$0.15	$0.83				$5,147.03	03/22/01
Light Industrial			$5,146.000				$0.04	$0.11	$0.45				$5,146.60	03/22/01
Warehousing			$5,146.000				$0.02	$0.06	$0.32				$5,146.40	03/22/01
.75 Inch	$3,324.00				$2,386.00								$5,710	03/22/01
1 Inch	$5,540.00				$3,978.00								$9,518	03/22/01
1.5 Inch	$11,080.00				$7,956.00								$19,036	03/22/01
2 Inch	$17,729.00				$12,730.00								$30,459	03/22/01
3 Inch	$35,458.00				$25,461.00								$60,919	03/22/01
4 Inch	$55,404.00				$39,782.00								$95,186	03/22/01

Utah County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Alpine														
Residential		Per sq foot												
Single Family	$225.00	$0.0728	$800.00	$2,480.00	$760.00	$2,600.00			$845.00				$7,710	
American Fork														
Residential														
Single Family Detached	$1,630.00			$2,480.00	$1,368.00	$2,600.00							$8,078	03/21/03
All Other Housing Types Per Unit	$1,220.00			$2,480.00	$1,023.00	$2,200.00							$6,923	03/21/03
Nonresidential														
.625 Inch	$1,630.00			$2,480.00	$1,368.00								$5,478	03/21/03
.75 Inch	$1,780.00			$2,480.00	$1,494.00								$5,754	03/21/03
1 Inch	$2,229.00			$2,480.00	$1,874.00								$6,583	03/21/03
1.5 Inch	$2,829.00			$2,480.00	$2,380.00								$7,689	03/21/03
2 Inch	$4,478.00			$2,480.00	$3,771.00								$10,729	03/21/03
3 Inch	$16,621.00			$2,480.00	$14,013.00								$33,114	03/21/03
4 Inch	$21,118.00			$2,480.00	$17,807.00								$41,405	03/21/03
**All Nonresidential Timp Special Service District fees are based on ERUs (= 350 Gallons per day)*														
Eagle Mountain														
Residential														
General South Service Area	$2,615.00		$259.00		$934.00	$1,025.00	$45.00		$2,428.00		$575.00		$7,881	01/01/04
General North Service Area	$2,855.00		$82.00	$2,480.00	$434.00	$610.00	$45.00		$1,988.00		$619.00		$9,113	01/01/04

Utah County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Highland														
Residential														
Single Family		$1,350.00		$2,480.00		$1,276.00	$997.00		$1,210.00				$7,313	01/21/00
Highland Heights (Northwest Annexation)	$1,208.00	$2,095.00		$2,480.00	$554.00	$1,276.00	$997.00		$3,005.00				$11,615	01/21/00
Lehi														
Residential	Per ERU	Per ERU	Per ERU	Per ERU		Per ERU					Per ERU			
Single Family	$940.00	$960.00		$2,480.00	$460.00	$1,330.00			$1,020.00		$233.00		$7,423	
Multi Family	$940.00	$960.00		$2,480.00	$460.00	$1,220.00			$1,020.00		$233.00		$7,313	
Mobile Home and Trailer				$2,480.00	$460.00	$1,430.00			$1,020.00		$233.00		$5,623	
Other Residential Units				$2,480.00	$460.00	$1,225.00			$1,020.00		$233.00		$5,418	
Non Residential					$460.00				$1,020.00				$1,480	
.75 Inch	$1,200.00				$460.00				$1,020.00				$2,680	
1 Inch	$2,500.00				$460.00				$1,020.00				$3,980	
1.5 Inch	$7,300.00				$460.00				$1,020.00				$8,780	
2 Inch	$16,000.00				$460.00				$1,020.00				$17,480	
3 Inch	$45,000.00				$460.00				$1,020.00				$46,480	
4 Inch	$96,000.00				$460.00				$1,020.00				$97,480	
1 Inch Lateral		$960.00											$960	
1.25 Inch Lateral		$4,000.00											$4,000	
1.5 Inch Lateral		$6,500.00											$6,500	
2 Inch Lateral		$14,000.00											$14,000	
3 Inch Lateral		$40,000.00											$40,000	
4 Inch Lateral		$86,000.00											$86,000	

Utah County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Lehi (continued…)														
100 Amp											$233.00		$233	
200 Amp											$378.00		$378	
400 Amp											$582.00		$582	
Commercial (per KVA)											$99.00		$99	
Lindon														
Residential			Per ERU		Per ERU									
1 Inch	$1,279.00		$799.00		$2,561.00	$1,129.22							$5,768	
1.5 Inch	$1,644.00		$799.00		$2,561.00	$1,129.22							$6,133	
2 Inch	$2,649.00		$799.00		$2,561.00	$1,129.22							$7,138	
3 Inch	$10,049.00		$799.00		$2,561.00	$1,129.22							$14,538	
4 Inch	$12,790.00		$799.00		$2,561.00	$1,129.22							$17,279	
Single Family			$799.00		$2,561.00	$1,498.85							$4,859	
Non Residential			$799.00		$2,561.00								$3,360	
Road impact fees are assessed in some small areas of Lindon. No residential areas have had fees assessed yet, and the amount is determined by the inspector.														
Pleasant Grove														
Residential	Per unit			Per unit	Per unit	Per unit	Per unit	Per unit	Per 1000 sq ft					
Low Density Residential	$1,024.00			$2,480.00	$1,034.00	$890.00	$80.21	$79.40	$616.96				$6,205	03/26/04
Medium Density Residential	$1,024.00			$2,480.00	$1,034.00	$890.00	$80.21	$79.40	$616.96				$6,205	03/26/04
High Density Residential	$1,024.00			$2,480.00	$1,034.00	$890.00	$80.21	$79.40	$616.96				$6,205	03/26/04
Non Residential (per 1,000 sf)					Per 1000 sq ft		Per 1000 sq ft	Per 1000 sq ft						
Office 17,500-37,500				$2,480.00	$600.00		$41.00	$26.00					$3,147	03/26/04

Utah County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Pleasant Grove (continued…)														
Commercial 75,000-150,000				$2,480.00	$600.00		$86.00	$70.00					$3,236	03/26/04
.75 Inch	$1,024.00	$1,034.00											$2,058	03/26/04
1 Inch	$2,353.00	$1,137.00											$3,490	03/26/04
1.5 Inch	$4,853.00	$1,443.00											$6,296	03/26/04
2 Inch	$6,618.00	$1,864.00											$8,482	03/26/04
3 Inch	$12,353.00	$3,000.00											$15,353	03/26/04
4 Inch	$18,529.00	$11,365.00											$29,894	03/26/04
Saratoga Springs														
Single Family Residential			$559.00	$2,480.00	$1,200.00	$833.00	$327.00		$921.00				$6,320	
**Commercial fees calculated individually using ERUs as a base unit.*														

Weber County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
Farr West														
Single Family	$1,165.00		$0.20 per sq ft*		$1,650.00	$600.00		$150.00				$100.00	$3,665	
Morgan City														
Single Family	$1,568.95				$550.00	$975.00			$800.00		$538.02		$4,432	12/31/02
North Ogden City														
Residential														
Single Family	$1,308.00		$980.00		$142.00	$1,960.00		$150.00					$4,540	04/19/04
Multi Family	$995.00		$755.00		$49.00	$1,170.00							$2,969	04/19/04
Unincorporated	$1,897.00												$1,897	04/19/04
Non Residential														
Commercial (per sf)	$0.13		$0.44		$0.01								$0.58	04/19/04
Plain City														
.75 Inch	$1,795.00												$1,795	
1 Inch	$2,268.00												$2,268	
1.5 Inch	$2,970.00												$2,970	
2 Inch	$6,750.00												$6,750	
3 Inch	$10,621.00												$10,621	
4 Inch	$18,018.00												$18,018	
6 Inch	$24,000.00												$24,000	

Weber County														
	Culinary Water	**Secondary Water**	**Storm Drainage**	**Special Service District (Sewer)**	**Sewer**	**Parks / Open Space**	**Law Enforcement**	**Fire / Emergency Service**	**Roadway**	**Flood Control Basin Fee**	**Power**	**Garbage**	**Totals**	**Date Fee Updated**
South Ogden														
Single Family	$1,334.55		$578.00		$131.00	$768.17			$448.83				$3,261	
Multi-Family	$957.54		$476.00		$94.06	$553.50			$310.95				$2,392	
South Weber														
Single Family	$1,027.00		$500.00		$1,173.00	$750.00	$116.00		$518.00				$4,084	
Washington Terrace														
Single Family	$828.00		$791.00		$554.00	$2,421.00	$174.00	$235.00					$5,003	04/21/04
Multi Family (PRUD)	$621.00		$421.00		$415.00	$1,852.00	$128.00	$172.00					$3,609	04/21/04
Hotel Motel	$497.00		$167.00		$332.00		$18.00	$402.00					$1,416	04/21/04
Senior Living Centers	$621.00		$265.00		$415.00	$795.00	$33.00	$213.00					$2,342	04/21/04
General Commercial (per SF)	$0.38		$0.49		$0.25		$0.06	$0.39					$1.57	04/21/04
Office (per SF)	$0.17		$0.49		$0.11		$0.06	$0.39					$1.22	04/21/04
West Haven														
Single Family	$2,056.00		$400.00		$2,100.00	$705.00		$216.79	$1,878.00				$7,356	

BRIGHAM CITY

PARKS AND OPEN SPACE CAPITAL FACILITIES PLAN

Introduction

The basic purpose of the Parks Department is to provide recreational opportunities for local residents through a variety of experiences and park facilities, as well as to enhance the community's atmosphere and image. The purpose of the Capital Facilities Plan is to provide a roadmap for future development of parks and open space. In order to do so, the study identifies current park and open space acreage, park facilities, park standards, the demands that will be placed on existing public facilities by new development, how these demands will be met and how facilities will be financed.

The Capital Facilities Plan is based on the assumption that the existing parks and open space standard is the *de jure* standard. This means that the existing number and types of parks / open space facilities is appropriate for the current population in the city. This becomes the standard to be used when determining the amount of parks and open space needed to meet the future populations as well. In other words, the current standard is the ideal standard, and the analysis assumes no deficiency in current park and open space acres. In the case of Brigham City, the *de facto* (existing) standard is also the *de jure* (rightful) standard.

Inventory of Existing Parks, Open Space and Facilities

Table A-1: Inventory of Existing Parks and Open Space in Brigham City, 2004

Park Name	Total Park Acreage	Improved Acreage	Open Space	Unimproved Acreage
1200 West Fish Pond (Natural wetlands)	21.14	-	21.00	0.14
Animal Control Shelter Wetlands	1.68	-	1.68	-
Bill of Rights Plaza	3.58	3.58	-	-
Brigham Young Park	1.92	1.92	-	-
Constitution Park	8.40	8.40	-	-
E. Christensen Farms	65.00	-	-	65.00
Frog Pond Detention Basin	7.45	-	-	7.45
Horsley Park	1.03	1.03	-	-
John Adams Park	13.07	13.07	-	-
Lindsay Park	2.84	2.84	-	-
Mary E. Christensen Park	2.67	2.67	-	-
Mayor's Pond	18.48	-	18.48	-
Memorial Park	5.50	5.50	-	-
Playground Park	1.05	1.05	-	-
Reeder Grove Park	3.00	-	-	3.00
Rees Pioneer Park	37.27	37.27	-	-
Snow Park	2.09	2.09	-	-

Table A-1: Inventory of Existing Parks and Open Space in Brigham City, 2004				
Park Name	**Total Park Acreage**	**Improved Acreage**	**Open Space**	**Unimproved Acreage**
Watkins Park	5.98	5.98	-	-
Total	202.15	85.40	41.16	75.59
Less Donated Park land				
John Adams Park	(5.00)	(5.00)	-	-
Constitution Park	(8.40)	(8.40)	-	-
Memorial Park	(7.80)	(7.80)	-	-
Total	(21.20)	(21.20)	-	-
Net Total	180.95	64.20	41.16	75.59
Golf Course	173.00	173.00	-	-
Source: Brigham City Parks and Recreation				

School ground acreage has not been included in this analysis. While schools do provide some recreational opportunities for children, they are generally very limited in their accessibility to the general population. In addition, they are under school district, rather than City control and therefore cannot be directly used to further the recreational goals and objectives of Brigham City.

Private parks (accessible to members only) have not been included in the analysis. Therefore, total existing park acreage is 202 acres, with 85 of the acres improved. When deducting donated park land of 21 acres, the existing park land declines to 181 acres of which 64 are improved and 41 are open space. Donated land is deducted to accurately represent the level of service Brigham City intends to maintain for future residents. Brigham City does not foresee future land being gifted to the City, and therefore, does not plan for that level of service.

The golf course includes 173 acres of land. Condominiums sit on approximately 1.9 acres, of which the City owns roughly 60 percent of the area, while private condominiums owners represent the balance of ownership. The property was deeded to Brigham City from the Federal Government in a series of transactions beginning in 1962 and ending in 1985. For 82 acres of the land, there is a clause that the land must be used for public parks and recreation purposes; failure to do so would allow the Secretary of Interior to reclaim the land. All but approximately 26 acres of golf course land was deeded by the Federal Government to the City. Twenty acres were donated to the City and six acres were acquired through land swapping.

As shown in the table below, Brigham City parks provide a wide range of recreational opportunities. It is assumed that the development of new parks will offer a similar mix of activities.

Table A-2: Brigham City Park Facilities, 2004												
Park	**Tennis**	**Volleyball**	**Baseball**	**Soccer**	**Play-ground Equip**	**Rest-rooms**	**Con-cessions**	**Parking**	**Walking Track**	**Bowery**	**Swimming Pool**	**Other**
Animal Control Shelter Wet-lands												
Bill of Rights Plaza												festivals, concerts, Christmas display
Brigham Young								2 lots				historic cabin
Constitution		volley-ball stds.		1 soccer/ football	1 modular play-ground	1 park		1 lot		1 mid-size, seats up to 100		skate park
Horsley					1 modular play-ground	1 park		on street	yes	1 sm.		
John Adams	4 tennis courts	1 sand court; volley- ball stds.			1 modular play-ground	1 park		2 lots				Sledding slope
Lindsay		volley- ball stds.		1 sm. soccer	1 modular play-ground	1 park		angle		1 sm.		basketball court
Mary E. Christensen				1 sm. soccer	1 modular play-ground	1 park		on street	yes	1 sm.		
Mayor's Pond												fishing pond
Memorial			1 base-ball field			1 park		on street				
Playground					1 modular play-ground			on street				
Rees Pioneer		1 at pool; volley-ball stds.	2 base-ball fields,3 soft-ball fields	4 Soccer fields	1 modular play-ground	2 park, 1 pool	1 pool, 1 softball complex	3 lots	yes (Gold medal mile)	1 lg. seat 100+	Out-door summer	fishing pond
Snow		volley-ball stds.	tee ball field		1 modular play-ground	1 park		on street		1 sm.		
Watkins		volley- ball stds.		1 soccer/ football	1 modular play-ground	1 park		2 lots		1 sm. seats up to 50		sledding slope

Source: Brigham City Parks and Recreation

Demand Placed on Existing Park Facilities by New Development

The 2004 population of Brigham City is an estimated 18,742[37] persons. It is projected that the City

[37] Bear River Association of Governments

will reach a population of 27,734[38] by 2030. The population increase of 8,992 persons, or 48 percent of the current population, will place additional demands upon existing City parks and open space unless new parks are developed to mitigate the impacts of local growth.

Brigham City currently maintains a standard of 3.43 acres of developed park land per 1,000 residents, determined as follows:

(64 acres ÷ 18,742 residents) x 1,000 residents = 3.43 acres per 1,000 residents

If no new parks are developed, the standard will drop to 2.31 acres of developed park land per 1,000 residents.

(64 acres ÷ 27,734 residents) x 1,000 residents = 2.31 acres per 1,000 residents

The current standard for open space is 2.20 acres per 1,000 population.

(41 acres ÷ 18,742 residents) x 1,000 residents = 2.20 acres per 1,000 residents

If no new open space is planned for, the standard will decrease to 1.47 acres of open space per 1,000 residents.

(41 acres ÷ 27,734 residents) x 1,000 residents = 1.47 acres per 1,000 residents

Brigham City has set forth the goal of maintaining the current standard of 3.43 developed park acres and 2.20 open space acres per 1,000 residents. Therefore, when the City is fully developed, 31 additional park acres and 20 additional open space acres will be required as shown in the table below.

Table A-3: Comparison of Brigham City's Developed Park and Open Space Acres

	Population	Developed Park Acres	Acres/1000 Population	Open Space Acres	Acres/1000 Population
Current (2004)	18,742	64	3.43	41	2.20
Buildout (2030)	27,734	95	3.43	61	2.20
		31		20	

This standard does not place an undue burden on the residents of Brigham City, as it is well below the guideline of 6.5 developed park acres established by the National Recreation and Park Association (NRPA). This guideline established by the NRPA was once a recommended standard; however, NRPA concluded these guidelines were too prescriptive and not specific enough to each unique community. The guideline of 6.5 acres is now used simply as a 'comparison of communities.'

Experience indicates that 3.43 acres of developed park land per 1,000 population is an acceptable level for the community. It should be remembered that national standards represent an ideal, as gathered

[38] Bear River Association of Governments

from varying localities. The ideal standard set forth by the NRPA does not take into account the fact that communities vary in location, access to adjacent open lands, size, climate, culture, demographics and socio-economics. These differences can and do affect park needs and priorities.

One example is the variance of needs among age groups. Pre-school children want playground equipment while demand for soccer fields is high among school-age children. Often changing age demographics will affect the type of parks and recreation facilities desired by a community. The following table compares the age demographics of Brigham City with those in the State of Utah.

Table A-4: Age Characteristics of Brigham City and the State of Utah

Age Cohort	Brigham City	State of Utah
Under 5 years	9%	9%
5 to 9 years	9%	9%
10 to 19 years	19%	18%
20 - 34 years	19%	25%
35 - 54 years	23%	24%
55 to 64 years	7%	6%
65+ years	12%	9%
	100%	100%

Source: U.S. Census Bureau

Age characteristics of Brigham City are very similar to those throughout the State of Utah. Projections for the State are for a general aging of the population, with the median age reaching 27 by the year 2014 and 29 by the year 2020. The aging of the population suggests that the current level of park facilities, now considered to be appropriate for Brigham City, will continue to be a suitable standard in the future.

Brigham City does not plan to expand the City's golf course facilities, indicating the existing facilities are adequate to meet the needs of a growing population. The Brigham City golf course was originally funded by a bond in the amount of $1.7 million issued in 1988 as a Municipal Revenue Bond, and then converted to a General Obligation Bond in 1994. Original funding of the golf course also included roughly $3 million acquired by the City by sale of two land parcels, for a total original investment in the golf course of $4,772,967. On-going maintenance is covered by golf course fees in a separate fund. The current value of the golf course is $3,980,634. This value represents the current book value with buildings and equipment having been depreciated, exclusive of land. If the land were valued at an estimated market value $19,030,000, the golf course value would be $23,010,634.

Meeting the Increased Demand for Parks

Brigham City has grown at a rate of 1.1 percent per year since 1990. The Bear River Association of Governments predicts a 1.56 percent growth rate from 2000's population of 17,411 to 2030's projected population of 27,734. The following table shows the amount of developed park and open space acreage the City will need to acquire each year, assuming the population growth outlined above.

Table A-5: Population Growth and Park / Open Space Acreage Required to Meet Growth							
Year	Population	Total Park Acres Required	Acreage Increase from Previous Yr	Cumulative Increase in Acres from 2004 Level	Total Open Space Acres Required	Acreage Increase from Previous Yr	Cumulative Increase in Acres from 2004 Level
2004	18,742	64	-	-	41	-	-
2005	19,035	65	1	1	42	1	1
2006	19,333	66	1	2	42	1	1
2007	19,635	67	1	3	43	1	2
2008	19,942	68	1	4	44	1	3
2009	20,254	69	1	5	44	1	3
2010	20,571	70	1	6	45	1	4
2011	20,893	72	1	7	46	1	5
2012	21,220	73	1	8	47	1	5
2013	21,551	74	1	10	47	1	6
2014	21,888	75	1	11	48	1	7
2015	22,231	76	1	12	49	1	8
2016	22,578	77	1	13	50	1	8
2017	22,932	79	1	14	50	1	9
2018	23,290	80	1	16	51	1	10
2019	23,655	81	1	17	52	1	11
2020	24,024	82	1	18	53	1	12
2021	24,400	84	1	19	54	1	12
2022	24,782	85	1	21	54	1	13
2023	25,169	86	1	22	55	1	14
2024	25,563	88	1	23	56	1	15
2025	25,963	89	1	25	57	1	16
2026	26,369	90	1	26	58	1	17
2027	26,781	92	1	28	59	1	18
2028	27,200	93	1	29	60	1	19
2029	27,625	95	1	30	61	1	20
2030	27,734	95	0	31	61	0	20
Source: Bear River Association of Governments							

Of course, land would not likely be added in small increments, but rather in large, more meaningful 'chunks.' In addition, some of Brigham City's future park lands are currently owned by the City (defined as unimproved park acres above). Basically, all of the needed 31 park land acres and the 20 open space acres are presently owned in the recently purchased Christensen Farm property which comprises 82 acres (65 of which will be used for park land) of unimproved land; however, according to Brigham City's Parks and Recreation management, additional land will need to be acquired in

several different areas of Brigham City to provide parks in closer proximity to new development. In addition to the undeveloped park lands listed above, Brigham City anticipates requiring two additional park sites of approximately four acres each.

These incremental parks would likely be of different sizes with different facilities. The NRPA has guidelines to determine an appropriate mix of park sizes in a community; however, as previously mentioned, the NRPA guidelines are simply a point of comparison, and communities are not required to adhere to these standards. Each type of park offers distinct benefits. For instance, while Mini Parks offer convenience close to home, Community Parks offer a wider range of recreational opportunities. These guidelines for achieving a mixture of park sizes are set forth in the tables below:

Table A-6: NRPA* Guidelines for Parks

Park Classification	Size	Service Area Radius
Mini	less than 1 acre	0.25 - .5 mile
Neighborhood	3 - 24 acres	0.5 - 1.0 mile
Community	over 25 acres	1.0 - 2.0 miles
Regional	over 200 acres	1 - 2 hrs driving time

**National Recreation and Parks Association*

Table A-7: NRPA Standards for Local and Regional Open Space

Park Classification	Minimum Acres/1,000 Population	"High" Acres/1,000 Population	Brigham City Current Acres/1,000 Population
Mini	0.25	0.5	0
Neighborhood	1	2	1.44
Community	5	8	1.99
Regional	5	10	0

Brigham City currently has one Community Park (Rees Pioneer Park) and 11 neighborhood parks based on the NRPA guidelines. At the present time, Brigham City falls short of the minimum guidelines for Mini, Community and Regional Parks, but achieves the Neighborhood Park standard. The City recently purchased Christensen Farm Park with a view toward new development, which, when developed, will come close to meeting the Community Park guidelines of five to eight acres per 1,000 population. Again, these guidelines are merely a tool of comparison, and no longer represent required standards for park development.

In summary, new park development needed to offset the impacts of growth in the community should take into account the following goals and considerations:

1. Maintain the standard of 3.43 acres of developed park land and 2.20 open space acres per 1,000 persons;
2. Geographic distribution and accessibility; and
3. Proper mix of recreational facilities and park sizes to meet community needs.

Recognizing there are constraints to land availability and community funds, future parks should be carefully planned to meet these City goals.

Cost of Park Development

As noted above, in anticipation of future growth, Brigham City has recently acquired 65 developable acres of land. Brigham City anticipates acquiring an additional eight acres of park land (two parcels at roughly four acres each) to provide neighborhood parks within newly developed communities.

The average cost of land in Brigham City is $120,000 per acre;[39] therefore, it is estimated it will cost Brigham City $960,000 to obtain approximately eight acres of land. This cost is eligible for funding through the use of impact fees.

Development costs of $120,000 per acre will total $960,000 for the eight acres of additional park development. For the 65 acres of undeveloped land recently acquired by Brigham City, it is estimated development costs of $7.8 million will be required. Brigham City requires 31 developed park land and 20 open space acres to meet the needs of future growth. As outlined above, Brigham City anticipates needing to purchase eight additional acres, and assumes the remaining 23 acres of developed park land and 20 acres of open space are represented in the 65 acres the City recently acquired. A portion of the $7.8 million is therefore eligible to be paid by impact fees.

The current park value (excluding golf course facilities) per 1,000 population is $818.

$15,332,323 value ÷ 18,742 population = $818 value per person

Table A-8: Value of Existing Parks in Brigham City, 2004

Park Name	Total Acreage	Value**
1200 West Fish Pond Wetlands	21.14	$211,400
Animal Control Shelter Wetlands	1.68	$50,400
Bill of Rights Plaza	3.58	$393,800
Brigham Young Park	1.92	$211,200
Constitution Park	8.4	$924,000
Horsley Park	1.03	$113,300
John Adams Park	13.07	$1,437,700
Lindsay Park	2.84	$312,400
Mary E. Christensen Park	2.67	$293,700
Mayor's Pond	18.48	$554,400
Memorial Park	7.8 (5.5 parks, 2.3 cemetery)	$858,000
Playground Park	1.05	$115,500
Rees Pioneer Park	37.27	$4,099,700

[39] Brigham City assessor's office quoted an average cost of $120,000 per acre.

Table A-8: Value of Existing Parks in Brigham City, 2004		
Snow Park	2.09	$229,900
Watkins Park	5.98	$657,800
Total Land Value		$10,463,200
Equipment Value*		$4,869,123
Total Park Value		$15,332,323
Golf Course Land Value	173	$19,030,000
Golf Course Equipment Value		$3,980,634
Total Golf Course Value		$23,010,634
**Depreciated book value; ** Current market value of land associated with parks* *Source: Brigham City Parks and Recreation*		

The City plans to enhance existing park facilities by installing new playing fields, installing lights at various fields, adding to an existing skate-park, and constructing an amphitheater and recreation center, among other enhancements. (Specific enhancements by park, as well as development associated with new parks are outlined in the appendix.) These facilities enhancements will increase the value and related level of service of the *existing* parks, thus increasing the *existing* standard per resident.

If the City plans to increase the level of standard for the community overall, alternate funding methods can be executed to fund the cost of increasing the overall standard. The cost is absorbed by the community as a whole, thus increasing the overall standard. If the City chooses to raise its standard, it cannot increase its impact fees to that level until that standard has been achieved for the entire City. In other words, new development can never be charged a higher standard than existing developments. If this were to occur, new development would be forced to make up for present deficiencies in the system which is contrary to Utah law. Alternate funding methods are discussed in greater detail below.

Impact Fees for Park and Open Space Development

There are currently two bonds outstanding on Brigham City's swimming pool facilities. The bond amount of $2.8 million was issued in 1996 and the bond in the amount of $2,035,000 was issued in 2002, both with varying discount rates. Final bond payments will be made in 2006 and 2016 respectively.

In order to collect impact fees, Brigham City must first have a Capital Facilities Plan in place as outlined by the Impact Fees Act. The statute states that "before imposing impact fees, each local political subdivision shall prepare a capital facilities plan" [11-36-201 (2) (a)]. The statute also provides the following guidelines for adoption of the plan before impact fees may be imposed:
If a local political subdivision prepares an independent capital facilities plan rather than including a capital facilities element in the general plan, the local political subdivision shall, before adopting the capital facilities plan, give public notice of the plan according to this subsection, make a copy of the plan available to the public at least 14 days before the date of the public hearing, and hold a public hearing to hear public comment on the plan [11-36-201

(d) (I)].

All cities that charge impact fees are required to meet the new standards by July 1, 1997 or to delay charging impact fees until the provisions of the act are met.

Alternative Financing Methods

As detailed above, Brigham City has outlined the need for enhancements to existing park lands such as lighted ball-fields, addition to an existing skate-park, additional tables, an outdoor amphitheater, recreation center, etc. These enhancements would increase the existing level of service for Brigham City's residents, requiring funding other than impact fees. A summary of additional financing options is outlined below. These options include development actions, private and public partnerships, joint development, state and local funding and the general obligation bond.

As a condition of development approval, ***development exactions*** require that the developer give something to the City of Brigham for the development of public facilities. An exaction is often a land dedication for public improvement. The City can either require the dedication or, in the case of large scale development, can offer density bonuses.

It may be possible to form ***private and public partnerships*** for park development. In general, these partnerships are more successful and private fundraising is facilitated when a high-profile facility, such as a recreation center or cultural arts center, is involved. Experience indicates that it is difficult, if not impossible, to use private fundraising to develop neighborhood parks.

An extension of the private/public partnership concept is that of ***joint development***. Larger commercial sites in Brigham City may be willing to allow Brigham City use of some of their property (which eliminates capital expenditures for land acquisition). The development of park facilities and maintenance would become the responsibility of Brigham City.

There is a variety of ***state funds*** also available to cities throughout the state. ISTEA (Intermodal Surface Transportation Efficiency Act) funding is available through UDOT and the Wasatch Front Regional Council for transportation uses. This includes bicycle and pedestrian facilities. Competition for these funds is strong.

Funds for trails development are available through the Utah State Trails Committee and it is advisable, but not required, to have a Trails Master Plan in order to compete for these funds.

Brigham City can also fund parks through the ***general fund*** or through ***general bonding***. Bonding is often a good approach when large sums are needed because it allows the payments to be spread over a longer time period. The bonds are repaid through revenues received by the city – generally through property or sales taxes. Brigham City indicated an interest in developing an outdoor amphitheatre as well as a recreation center. Bonding would be a good source of funding for both endeavors given the high cost of each project.

Water-Sewer Impact Fee
Commercial Project Calculation Table

Fixture Supply Outlet Serving[a]	Flow Rate (gpm)[b]	Number of Fixtures	Water Use Total	Sewer Drainage Total
Bathtub (w/or without shower above)	4		0	0
Bidet	2		0	0
Clothes washer	4		0	0
Combination fixture/mop sink	4		0	0
Dishwasher, commercial	2.75		0	0
Drinking fountain	0.75		0	0
Lavatory	2		0	0
Shower (separate from bathtub)	3		0	0
Sillcock, hose bibb	5		0	0
Sink, residential (w/dishwasher)	2.5		0	0
Sink, service	3		0	0
Urinal	1		0	0
Water closet	1.6		0	0
Floor sinks/drains (non-emergency)[d]	2		0	0
Other:			0	0
Other:			0	0
Total GPM			0	0
Total ERU[a]			0.00	0.00

[a]Plumbing fixtures that do not conform to this table shall be calculated at the actual gpm use of each fixture as determined by the manufacture.

[b]Water ERU based on 31.7 gpm. Sewer ERU based on 23.7 gpm.
[c]Gallon per minute flow rates based on 2003 Internation Plumbing Code, Table 604.3.
[d] Based on 2003 Internation Plumbing Code, Table 709.1